

Houghton Mifflin 2

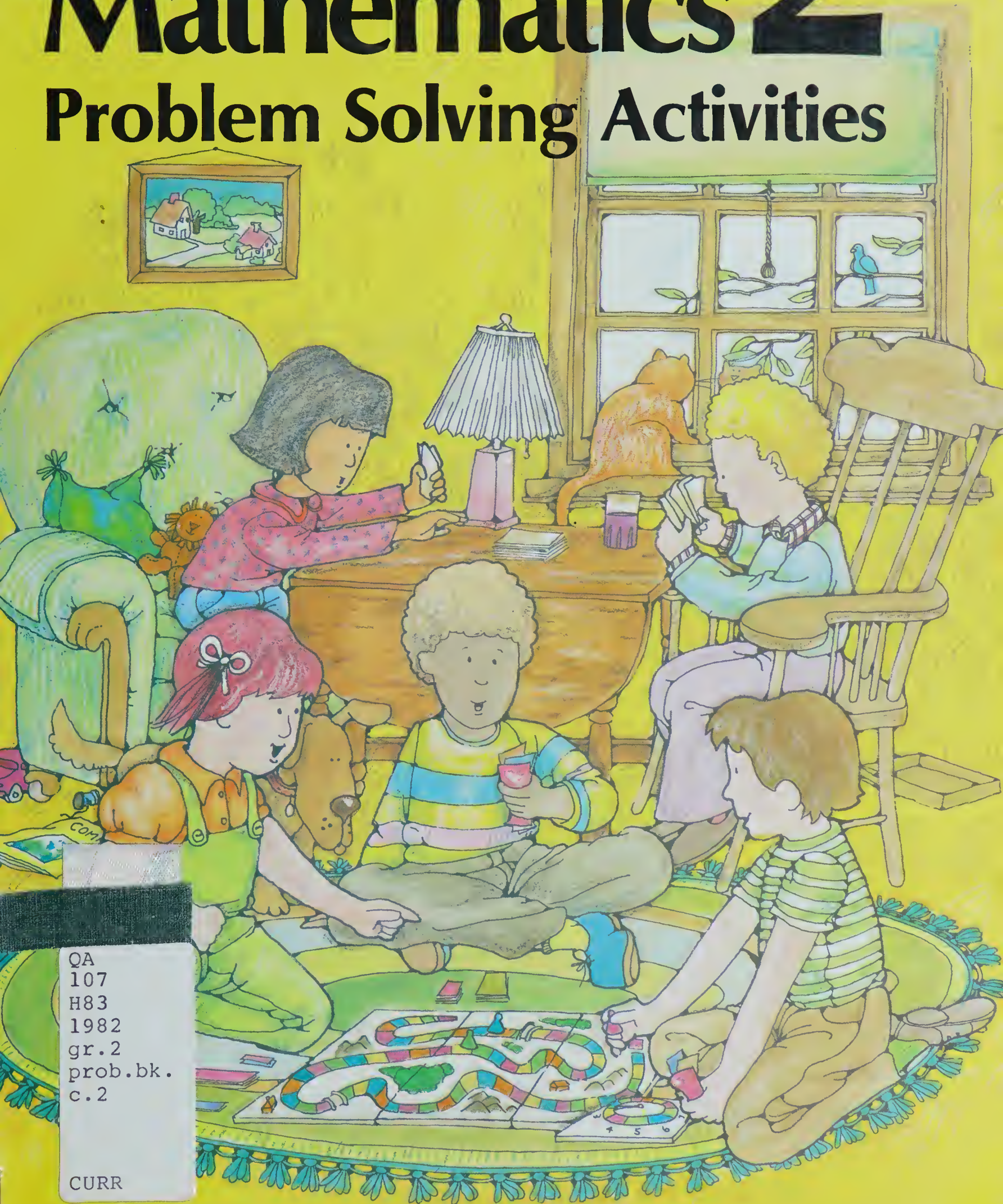
Mathematics

Problem Solving Activities

UNIVERSITY OF ALBERTA LIBRARY



0 0003 2632 200



QA
107
H83
1982
gr.2
prob.bk.
c.2

CURR



EX LIBRIS
UNIVERSITATIS
ALBERTÆNSIS

Houghton Mifflin Mathematics 2

Problem Solving Activities

Doug Super

RICHMOND SCHOOL DISTRICT
RICHMOND, BRITISH COLUMBIA

CONTENTS

	Problem Solving Notes	2
Unit 1	Organizing Information	3
Unit 2	Choosing the Example	7
Unit 3	Counting Patterns	11
Unit 4	Choosing the Example	15
Unit 5	Geometry Patterns	19
Unit 6	Writing a Problem	23
	Review Problems	27
Unit 7	Number Patterns	31
Unit 8	Measurement Problems	35
Unit 9	Choosing the Example	39
Unit 10	Labelling Answers	43
Unit 11	Organizing Information	47
Unit 12	Guess and Check	51
	Review Problems	55
	Answers	59

Houghton Mifflin Canada Limited
150 Steelcase Road West • Markham, Ontario • L3R 1B2

PROBLEM SOLVING NOTES

The activities in this workbook are designed to offer children opportunities to enrich their problem solving experiences. Each unit of activities focuses upon a particular type of problem or upon thinking through problems in particular ways.

Visualizing what is happening in the stated problem is very important, and is enhanced through use of pictures. After several practice exercises with book-provided pictures, the children are given the opportunity to follow directions and draw their own pictures to represent what is happening in the problem situation. This process helps the child to become actively involved in the problem formulation stage of problem solving. The transition from pictures to words to symbols is made slowly and carefully, reteaching and practising throughout the workbooks.

Verbalization of what is happening in a word problem is also very important. Children should be encouraged to do this often, since it enhances the development of good

language development and helps the child sort through the information, talking about or paraphrasing what is taking place in the problem situation. Ideas for discussions, along with other teaching suggestions, are included in the Teacher Notes at the bottom of the first page of each lesson.

Each of the 14 units has two lessons. Each lesson has Teacher Notes containing teaching suggestions and extension activities. The skills practised in each unit correspond by skill level to the classroom text. There are twelve content units and two review units. The units may be studied in any order as long as children have worked up to and through the corresponding unit in the text. This organization ensures that the children have studied the necessary computational skills for each workbook unit. Answers to all problems are available in the back of the book.

All rights reserved. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or by any information storage or retrieval system, except as may be expressly permitted in writing by the Publisher.

ISBN: 0-395-33019-X

Copyright ©1981 by Houghton Mifflin Company

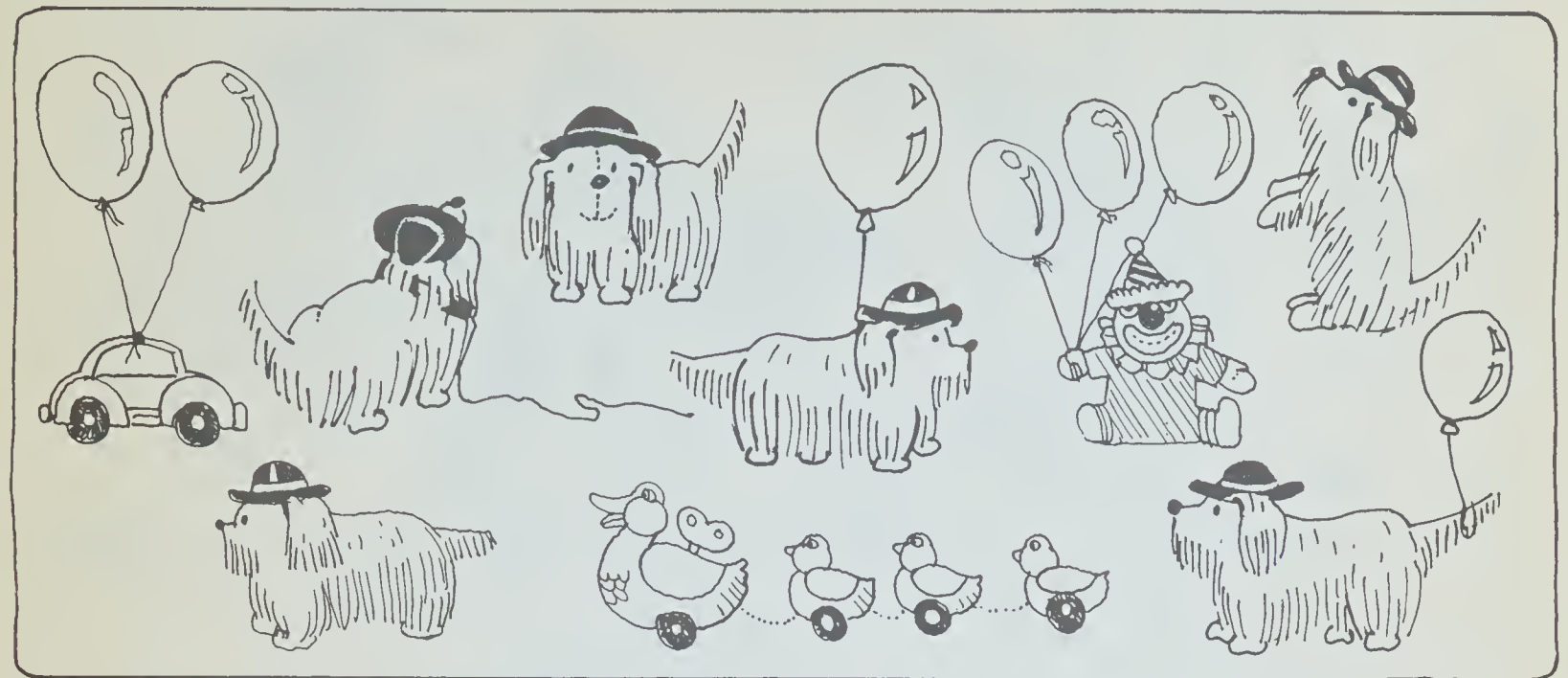
Copyright ©1982 by Houghton Mifflin Canada Limited

UNIT 1

NAME _____

Organizing Information

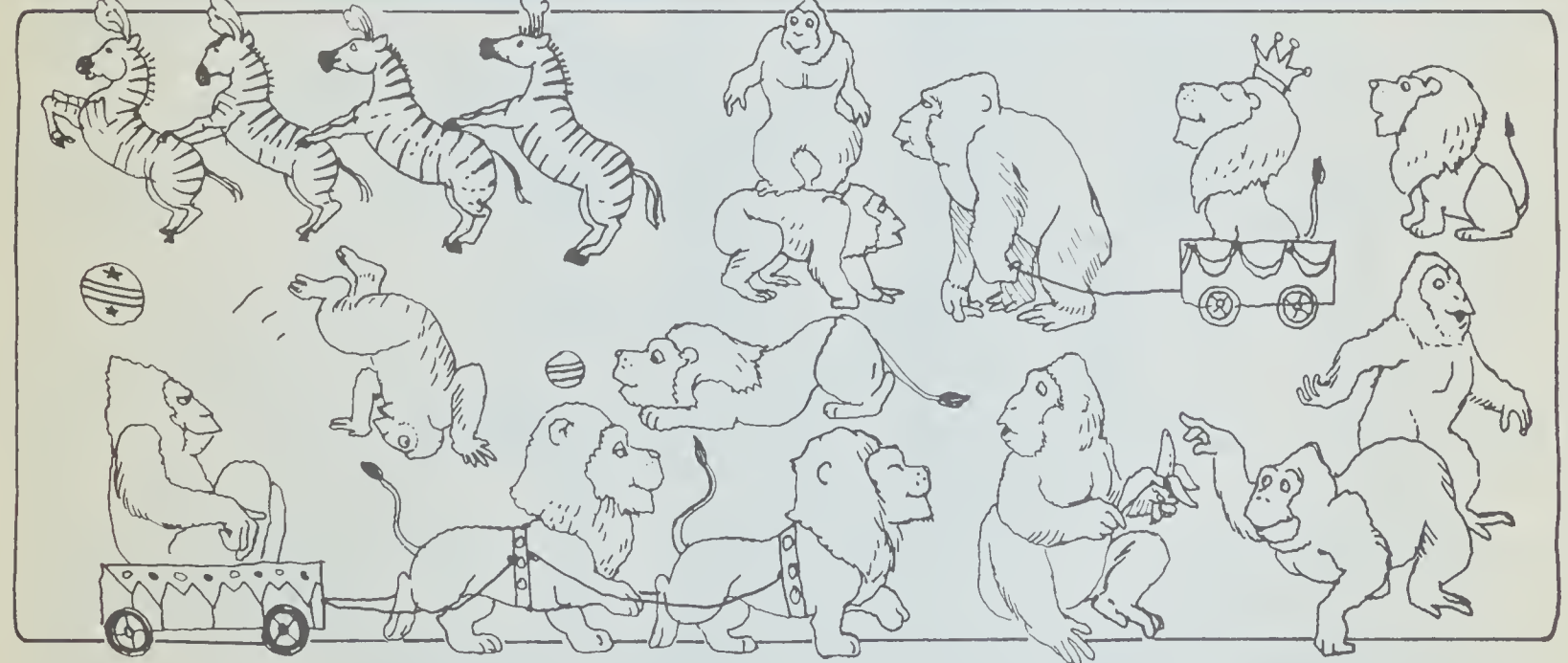
Colour the number.



6  red

4  green

2  blue



3  red

6  green

1  blue

TEACHER NOTES: This lesson provides readiness experiences to help the children use pictures in solving problems. On the first page, the children colour the number. On the second page, they write the numbers in a problem setting. These exercises are preliminary exercises for taking information from a picture and then organizing that information.

Write the number.



5 birds 1 flowers 4 kittens 2 puppies



4 tigers 4 monkeys 2 elephants 6 lions

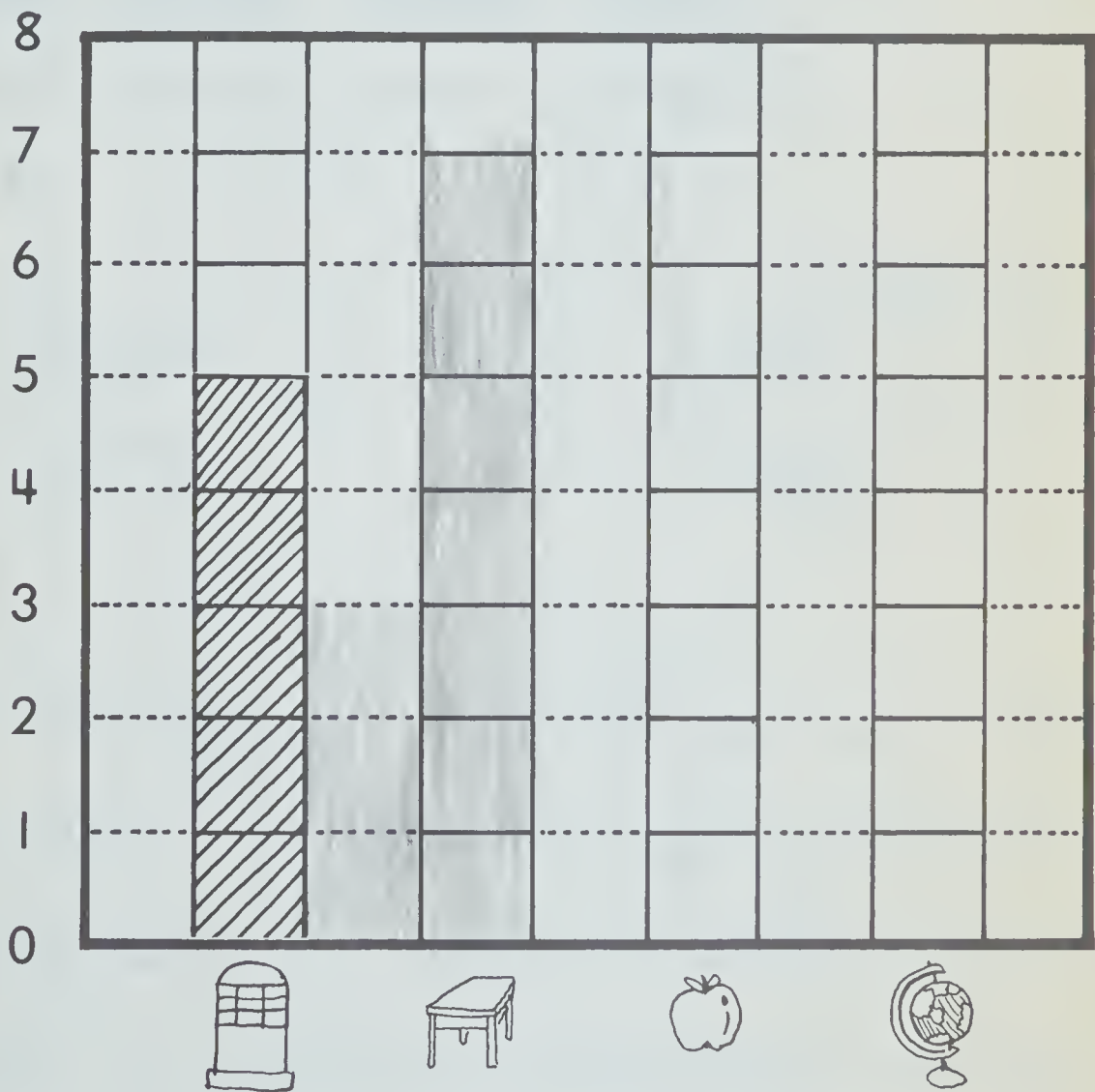
NAME _____



Write the number.

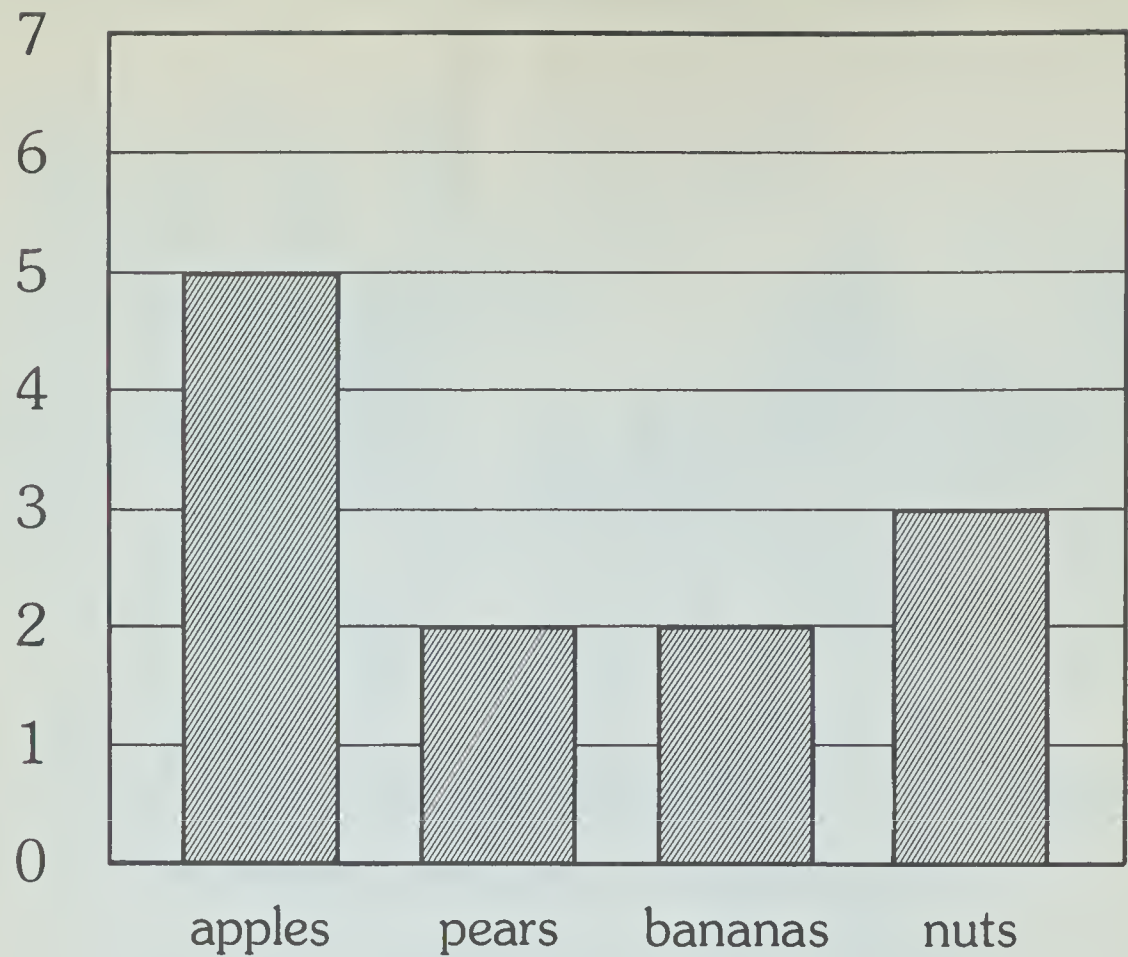
Colour the blocks to match the numbers.

5



TEACHER NOTES: Have the children count the indicated items in the picture and then write the numbers on the blanks. Next, tell the children to colour one block for each one of the items. Then, tell the children to read the graph by counting the number of blocks over each item in the graph.

Numbers of Fruit



How many

apples?	_____	bananas?	_____
pears?	_____	nuts?	_____

How many pears and nuts? _____ pears and nuts

How many pears and bananas? _____ pears and bananas

How many apples and nuts? _____ apples and nuts

How many apples, pears, and nuts? _____ apples, pears, and nuts

How many apples, pears, and bananas? _____ apples, pears, and bananas

UNIT 2

NAME _____

Choosing the Example

Match.



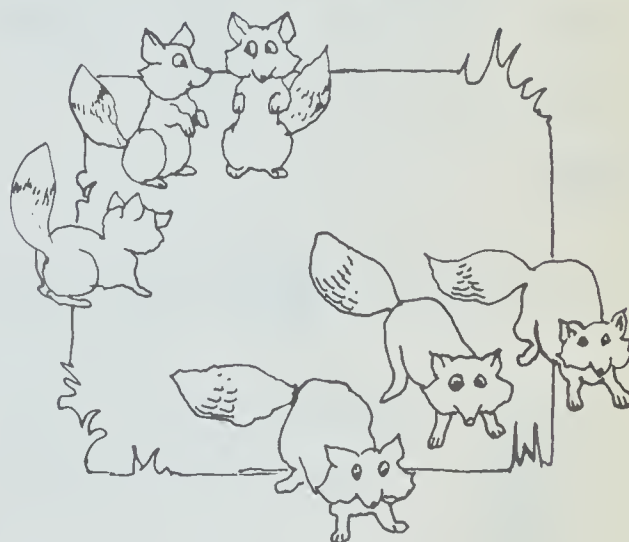
$$\begin{array}{r} 5 \\ + 3 \\ \hline 8 \end{array}$$



$$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \end{array}$$



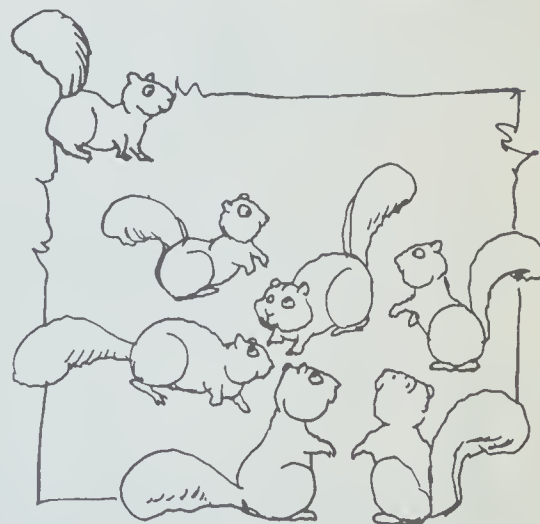
$$\begin{array}{r} 6 \\ - 3 \\ \hline \end{array}$$



$$\begin{array}{r} 6 \\ + 3 \\ \hline \end{array}$$



$$\begin{array}{r} 7 \\ + 1 \\ \hline \end{array}$$



$$\begin{array}{r} 7 \\ - 1 \\ \hline \end{array}$$



TEACHER NOTES: In this lesson, the children match the correct example to the picture on the first page and then match the correct example to the story problem on the second page.

Match.



6 (1¢)
Spends 3 (1¢)
How many are left?



$$\begin{array}{r} 6 \\ + 3 \\ \hline 9 \\ 6 \\ - 3 \\ \hline 3 \end{array}$$

6 (1¢)
Saves 3 (1¢)
How many in all?



5 
Eats 3 
How many are left?

$$\begin{array}{r} 5 \\ - 3 \\ \hline 2 \\ 5 \\ + 3 \\ \hline 8 \end{array}$$

5 
3 more 
How many in all?



8 
1 
How many in all?

$$\begin{array}{r} 8 \\ - 1 \\ \hline 7 \\ 8 \\ + 1 \\ \hline 9 \end{array}$$

8 
1 
How many more  ?

7 
2 
How many more  ?

$$\begin{array}{r} 7 \\ - 2 \\ \hline 5 \\ 7 \\ + 2 \\ \hline 9 \end{array}$$

7 
2 
How many together?

Write the letter to match the problem. Answer.

7 children playing
2 children leave
How many now?



F

6 marbles
Buy 2 more marbles
How many in all?



8 baseballs
2 basketballs
How many more baseballs?



6 pennies
Save 3 more pennies
How many in all?



9 pennies
Spends 3 pennies
How many are left?



7 jacks
Buy 2 more jacks.
How many now?



A	B	C	D	E	F
$\begin{array}{r} 6 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ - 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ - 2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ + 2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ - 2 \\ \hline 5 \end{array}$

TEACHER NOTES: The match of examples to story problems is presented in two methods for this lesson. On the first page, the children read the problem, find the correct arithmetic example, and then write the letter for that example in the box. On the second page, the children read the example and then find the story problem to match. You may wish to have the children write the arithmetic example in the story problem space.

Write the letter to match the problem. Solve the problem.

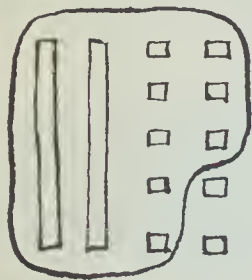
<div>M</div> <div>$\begin{array}{r} 9 \\ -7 \\ \hline 2 \end{array}$</div>	<div></div> <div>$\begin{array}{r} 2 \\ +7 \\ \hline \end{array}$</div>	<div></div> <div>$\begin{array}{r} 4 \\ +5 \\ \hline \end{array}$</div>	<div></div> <div>$\begin{array}{r} 8 \\ -8 \\ \hline \end{array}$</div>	<div></div> <div>$\begin{array}{r} 7 \\ -4 \\ \hline \end{array}$</div>	<div></div> <div>$\begin{array}{r} 9 \\ -8 \\ \hline \end{array}$</div>
<div>2 cows in a field 7 more cows walk in. How many in all?</div> <div>O</div>			<div><div>7 horses in a fence 4 horses run away. How many now?</div><div>E</div></div>		
<div><div>9 chickens in a nest 8 chickens leave. How many now?</div><div>R</div></div>			<div><div>4 ducks in a pond 5 more ducks walk in. How many now?</div><div>T</div></div>		
<div><div>9 goats in a pen 7 pigs in another pen How many more goats?</div><div>M</div></div>			<div><div>8 frogs in a pond 8 ducks in the same pond How many more ducks?</div><div>H</div></div>		

UNIT 3

NAME _____

Counting Patterns

Keep the patterns going.

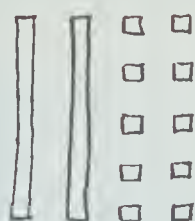


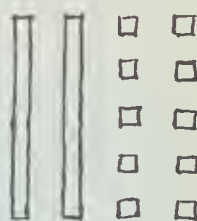
28

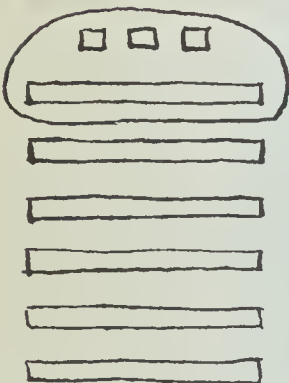


27

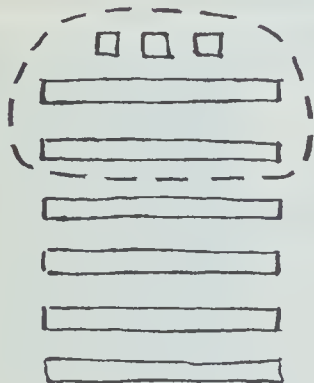




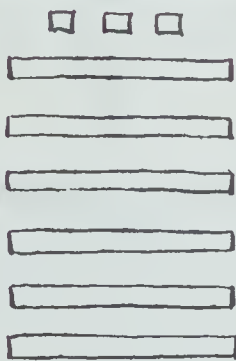


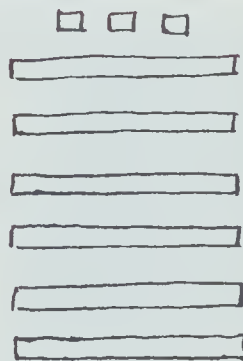


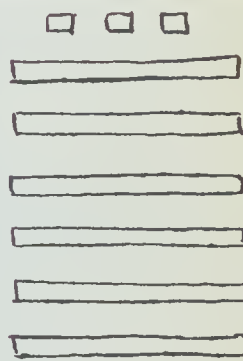
13

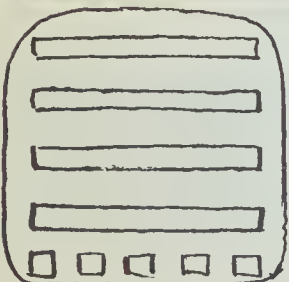


12

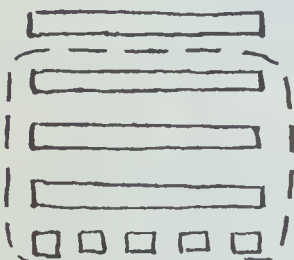




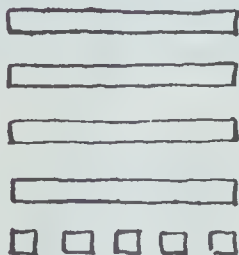


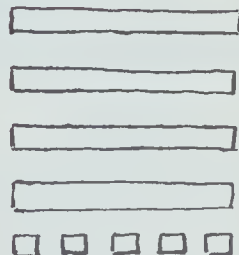


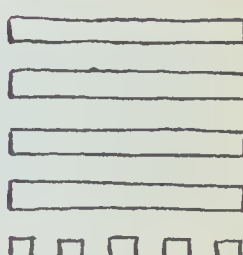
45



44

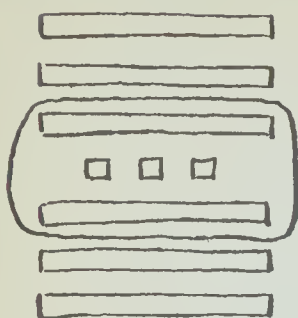




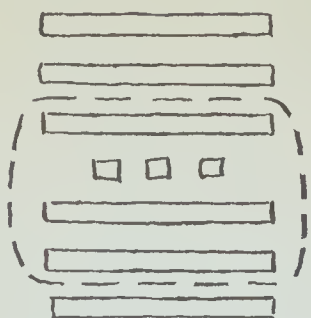


TEACHER NOTES: This lesson combines all counting situations found in Unit 3 of the workbook; namely, counting forward and back by ones and tens. Students show how the sets change and record the counting pattern.

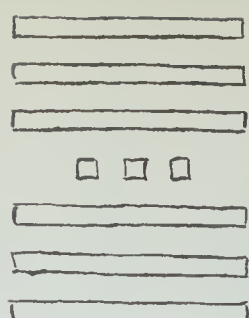
Keep the patterns going.

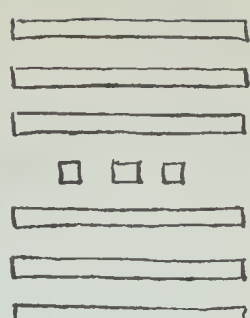


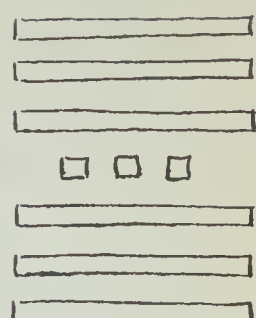
23

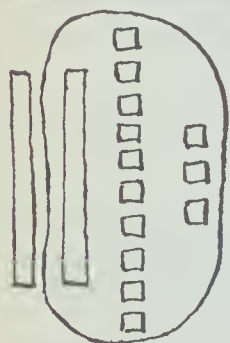


33







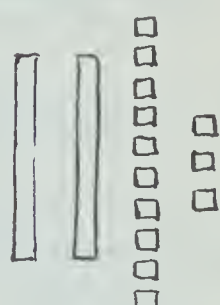


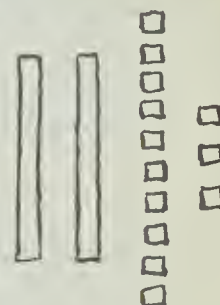
23

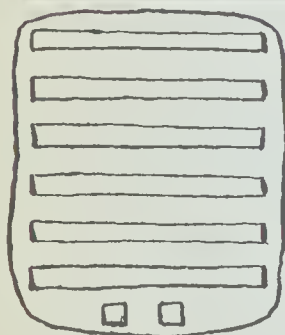


22

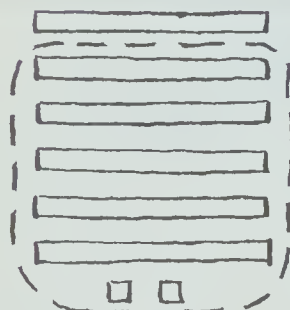




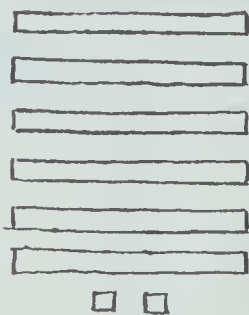


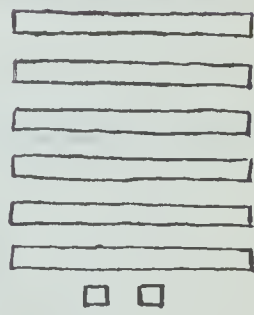


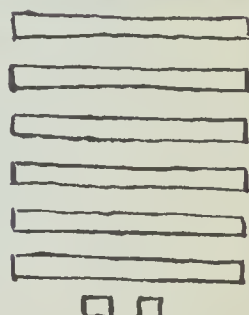
62



52









28



24







Keep the patterns going.

10	9	8			
				16	
			27		
40					
		58			
	69				
					75
				86	
					95

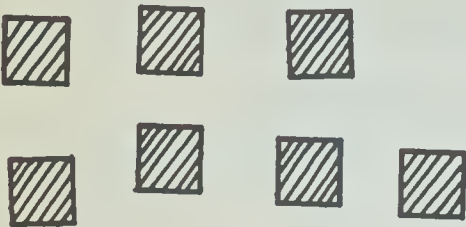
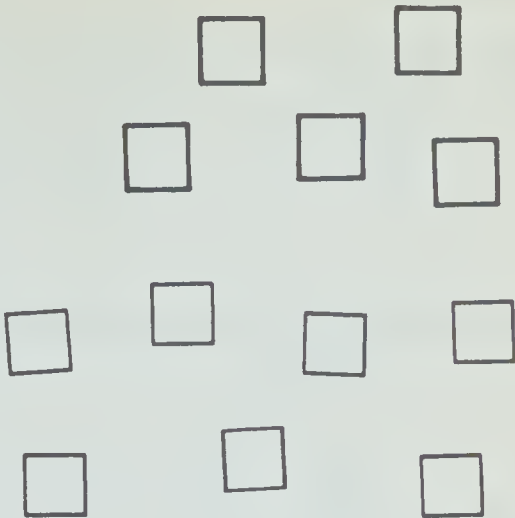
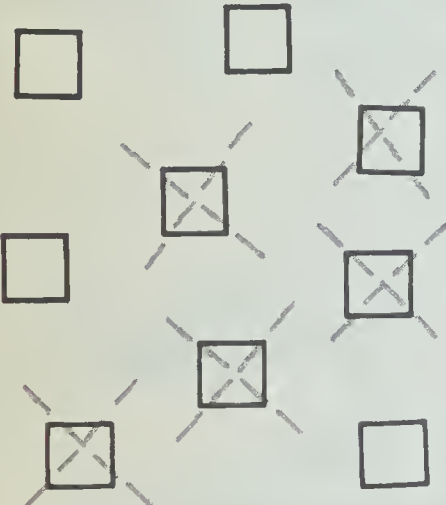



TEACHER NOTES: In this lesson, students determine counting patterns without picture clues. In many instances, the sequence must be deduced from only two numbers. Starting with 10, 9, . . . the puzzle naturally unravels.

Keep the patterns going.

			70	60	50
					49
98					
	87				
				56	
		75			
	82				

Choosing the Example

Colour or X to match the example.

<div><div><div>7</div><div>+ 3</div></div></div>	<div><div><div>5</div><div>+ 7</div></div></div>
<div><div><div>9</div><div>- 5</div></div></div>	<div><div><div>11</div><div>- 4</div></div></div>
<div><div><div>5</div><div>+ 3</div></div></div>	<div><div><div>10</div><div>- 7</div></div></div>

TEACHER NOTES: The exercises on this page provide experiences in X'ing or colouring to represent subtraction and addition respectively. For the second page, tell the children to write the numbers from the story in the correct blanks and choose the appropriate operation symbol.

Write the numbers.



7 frogs in a pond 7

3 more frogs hop in. $+$

How many in all?



7 leaves in a basket 7

4 leaves blow away. $-$

How many are left?



12 rabbits in a hutch 12

8 rabbits hop away. \square

How many now?



2 rings on a finger 2

Buy 5 more rings. \square

How many now?



11 pennies in a purse 11

5 pennies are lost. \square

How many are left?



2 coats in a closet 2

2 more coats are added. \square

How many in all?



10 ducks are playing. 10

4 ducks swim away. \square

How many now?



12 pigs in a pen 12

5 pigs go away. \square

How many now?

Write the numbers.



How much do you have?

12 ¢

How much do you spend?

9 ¢

How much do you have left?

3 ¢



How much do you have?

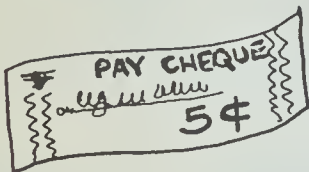
_____ ¢

How much do you spend?

_____ ¢

How much do you have left?

_____ ¢



How much do you have?

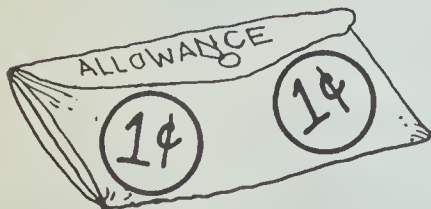
_____ ¢

How much do you earn?

_____ ¢

How much do you have in all?

_____ ¢



How much do you have?

_____ ¢

How much are you given?

_____ ¢

How much do you have in all?

_____ ¢

TEACHER NOTES: Both pictures and words are used to present the story setting in this lesson. Tell the children to answer the questions by writing the numbers in the arithmetic example. The square is provided as a space for children to write the operation symbol.

Write the numbers.

Gary has 11¢.	How much does Gary have?	<input type="text"/> _____ ¢
He spends 7¢.	How much does Gary spend?	<input type="text"/> _____ ¢
How much is left?	How much does Gary have left?	_____ ¢

Becky spends 8¢ for milk and 4¢ for crackers. How much does she spend in all?	How much for milk?	<input type="text"/> _____ ¢
	How much for crackers?	<input type="text"/> _____ ¢
	How much in all?	_____ ¢

Jana has 7¢.	How much does Jana have?	<input type="text"/> _____ ¢
She buys a truck for 5¢. How much is left?	How much is spent for the truck?	<input type="text"/> _____ ¢
	How much is left?	_____ ¢

Al has 9¢.	How much does Pete have?	<input type="text"/> _____ ¢
Pete has 11¢. How much more does Pete have?	How much does Al have?	<input type="text"/> _____ ¢
	How much more does Pete have?	_____ ¢










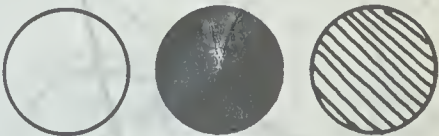


Sara spends 5¢ for a horn and 5¢ for a hat. How much does she spend in all?	How much is spent for the horn?	<input type="text"/> _____ ¢
	How much is spent for the hat?	<input type="text"/> _____ ¢
	How much in all?	_____ ¢

UNIT 5

NAME _____

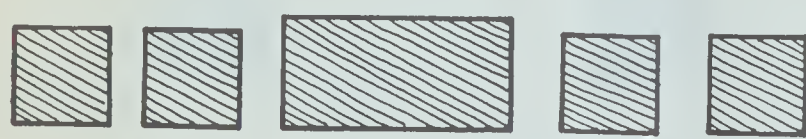
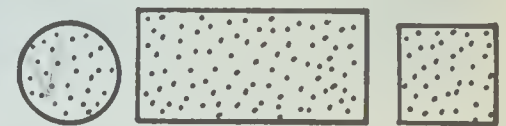
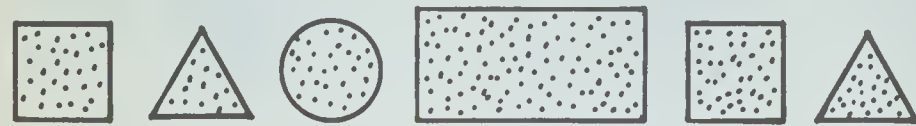
Geometry Patterns

What comes next?

TEACHER NOTES: Recognizing patterns in geometrical configurations is a readiness skill for the development of logical thinking. These two pages focus first on shape and colouring differences and then on shape, colouring, and size differences. Discuss with the children the placement and shadings of the different figures. Have the children say a word to name each figure so that they can hear the verbal pattern when they “read” the pattern.

What comes next?

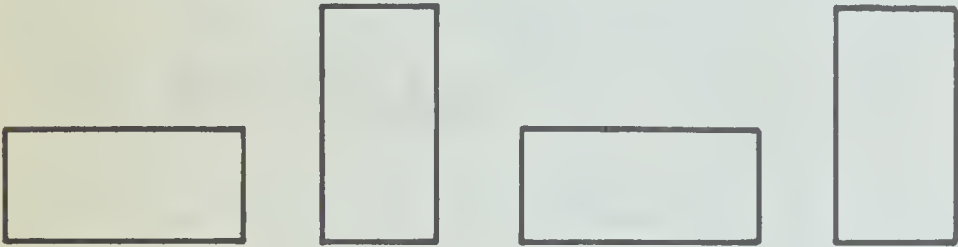


NAME _____

Draw the figures that come next.





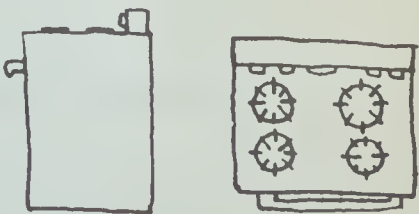
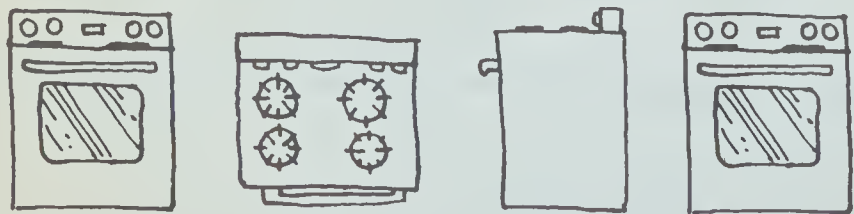
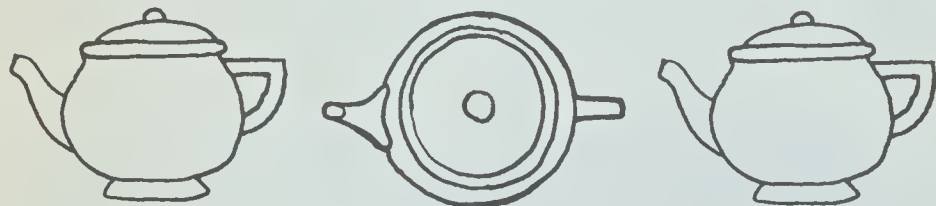






TEACHER NOTES: In this lesson, the recognition of patterns with geometric figures is developed using differences in shape or object orientation. The first page shows figures forming a pattern sequence as a result of “turning” the figures. The second page shows pattern sequences developed from different angles.

What comes next?

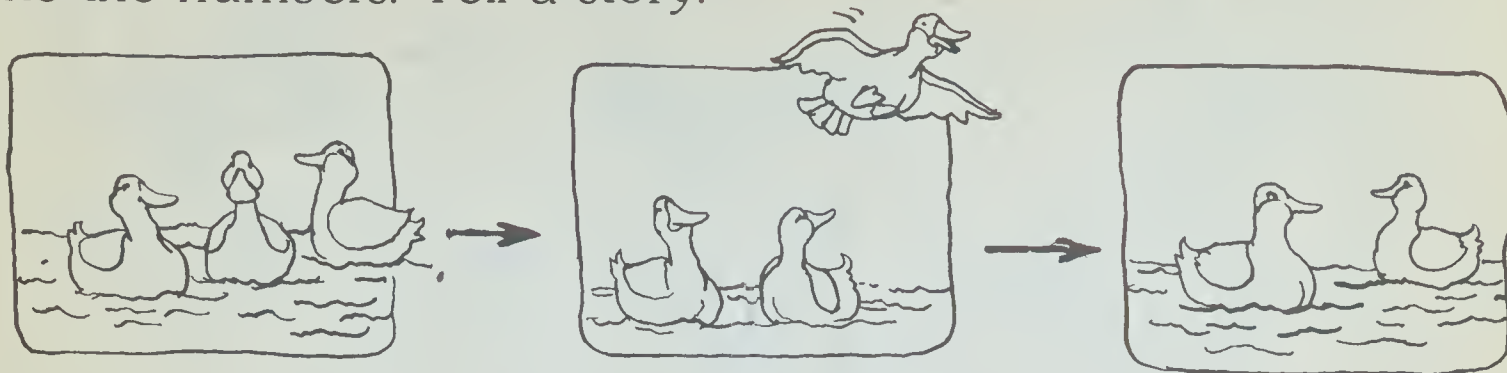


UNIT 6

NAME _____

Writing a Problem

Write the numbers. Tell a story.



$$\underline{\quad} \square \underline{\quad} = \underline{\quad}$$

There are 3 ducks swimming in a pond. The duck named Bob decides to fly. So the 2 ducks named Sam and Tim stay in the pond.



$$\underline{\quad} \square \underline{\quad} = \underline{\quad}$$

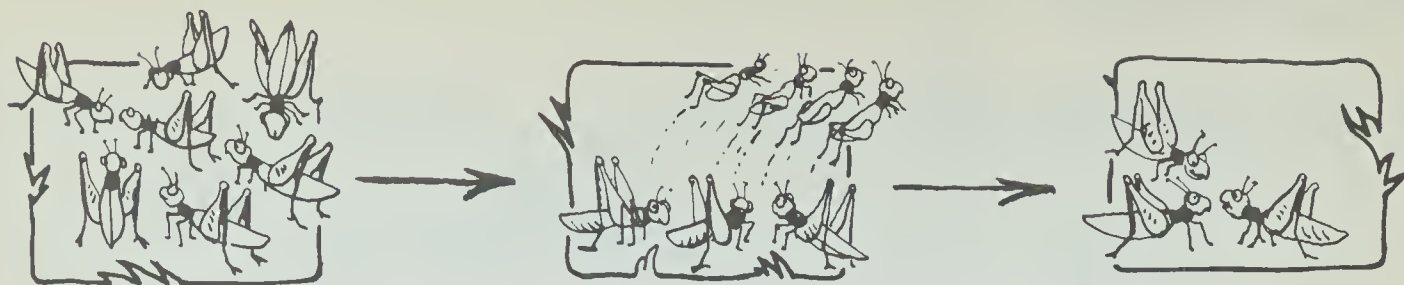
One morning 5 butterflies were sitting on a branch.

A bit later 3 more butterflies stopped to rest.

All 8 butterflies became happy.

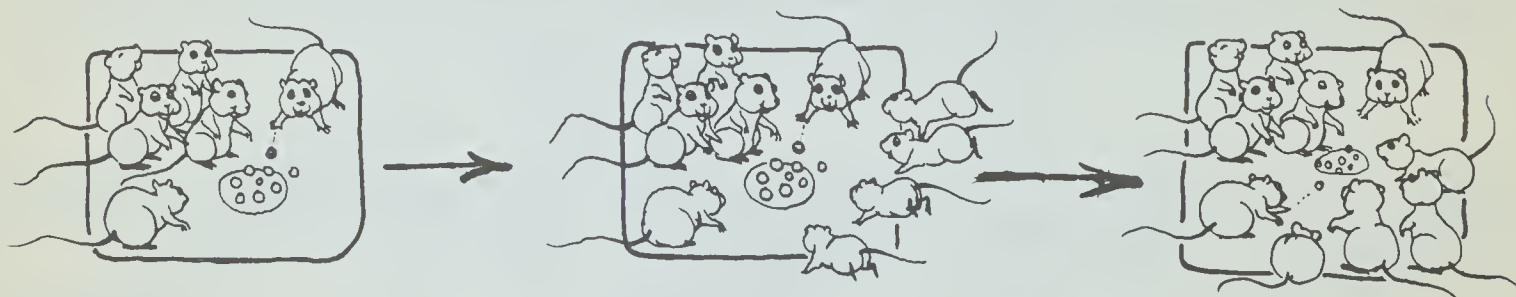
TEACHER NOTES: In order to provide another opportunity for children to become involved in the problem formulation part of problem solving, this lesson presents a problem situation in pictures and allows the children to write part of the story that would describe the picture problem. Blanks are also provided for the children to write the arithmetic examples for the problems.

Write the numbers. Tell a story.



_____ ☐ _____ = _____

Once upon a time there were _____ grasshoppers playing a game called _____. One day _____ grasshoppers decided to go play with _____. So _____ grasshoppers were left playing _____.



_____ ☐ _____ = _____

Last Wednesday _____ mice named _____, _____, _____, _____, _____, and _____ were playing at _____'s house. After awhile _____ more mice came over to play. Now all _____ mice are playing together.

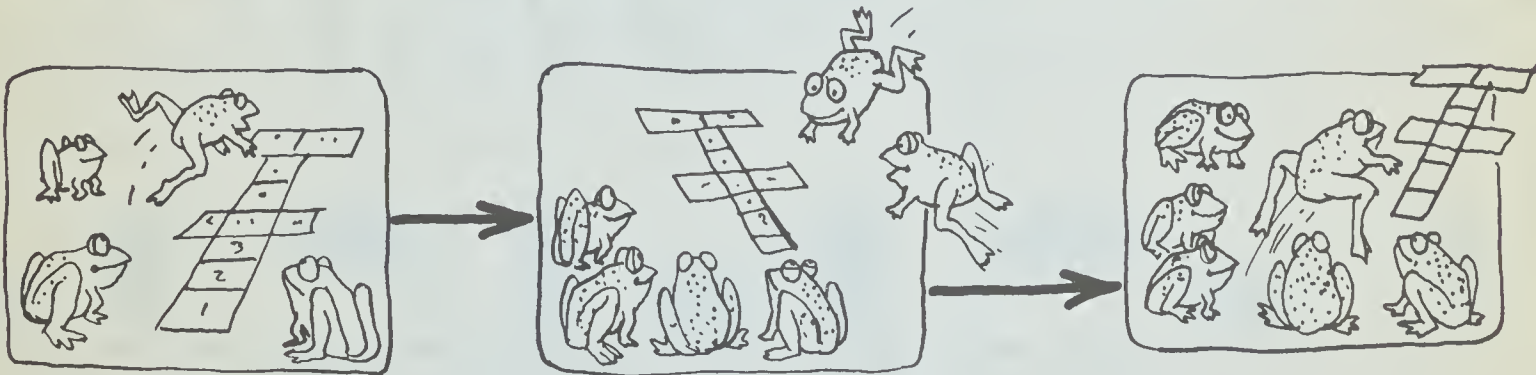
NAME _____

Write a problem.
Write the numbers.



One rabbit named _____ has _____ carrots. A friend named _____ takes _____ carrots from him. That leaves _____ with _____ carrots.

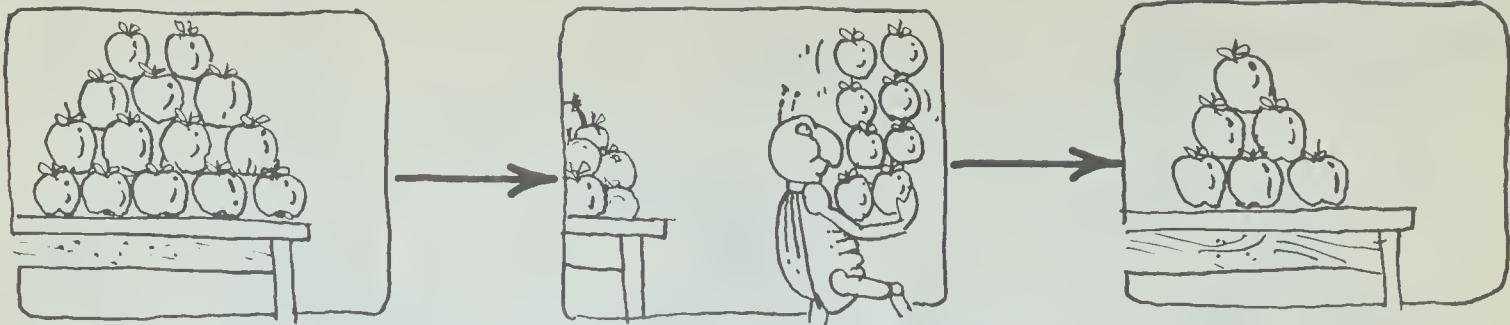
_____ _____ = _____



_____ _____ = _____

TEACHER NOTES: In this lesson, the children write the full story for the picture problem. One example shows several blanks to fill in for the word story. The children are to also write the arithmetic example that represents the story problem.








































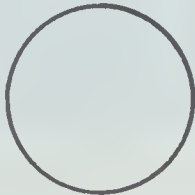












Write a problem.
Write the numbers.



Review Problems

Organizing Information	Counting Patterns	Geometry Patterns
Choosing the Example	Choosing the Example	Writing a Problem

What comes next?

Keep the patterns going.

	77				
88					38
89		69			
	80				
91				51	
	84				
			65		

Write the numbers.

Joe finds 6 shells.
He loses 4 .
How many are left?

How many does Joe find?
How many does he lose?
How many are left?

Jacob buys 8 red
socks and 4 blue ones.
How many socks does
he buy in all?

How many red socks?
How many blue socks?
How many in all?

Sal has 12¢. He
buys a banana for
9¢. How much
is left?

How much does Sal have?
How much for the banana?
How much is left?

Rose writes 4 poems
and 7 stories. How
many more poems
does she write?

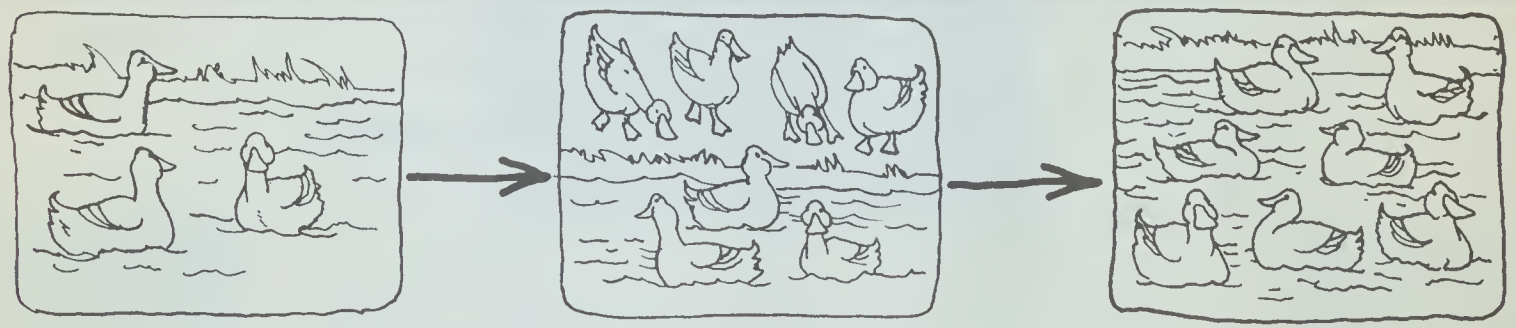
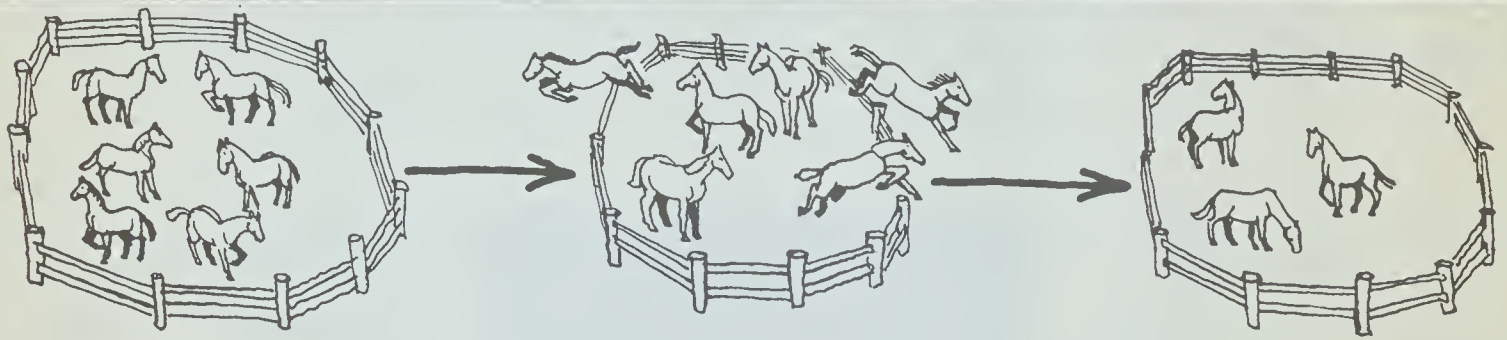
How many stories?
How many poems?
How many more poems?

Laura has 5¢. She
saves 6¢. How much
does she have now?

How much does Laura have?
How much does she save?
How much now?

Write a story problem.

Write the numbers.



UNIT 7

NAME _____

Number Patterns

Write the missing numbers in the pattern.

20 19 18 17 ____ ____ 14 ____

Subtract ____ to get the next number.

4 6 8 ____ ____ ____ 16 ____

Add ____ to get the next number.

11 22 33 ____ ____ ____ 77 ____

Add ____ to get the next number.

19 17 15 ____ ____ ____ 7 ____

Subtract ____ to get the next number.

TEACHER NOTES: On the first page, blanks are provided for each digit of the numbers in the patterns. This lets the children look at each digit separately in determining the number pattern sequence. On the next page, a single blank is provided for each number in the pattern. Encourage the children to discover that number sequences result from adding or subtracting the same number to get each new number in the pattern.

✓ Write the missing numbers in the pattern.

11 12 13 14 _____ _____ 17 _____

Add _____ to get the next number.

99 88 77 _____ _____ _____ 33 _____

Subtract _____ to get the next number.

97 86 75 64 _____ _____ 31 _____

Subtract _____ to get the next number.

21 32 43 _____ 65 _____ 87 _____

Add _____ to get the next number.

10 15 20 _____ _____ _____ 40 _____

Add _____ to get the next number.

17 22 27 32 _____ 42 _____ _____

Add _____ to get the next number.

Mr. Wack's class is counting supplies.

How many do they have of each?

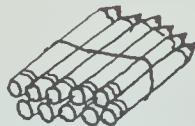
Write the missing numbers in the pattern.



10



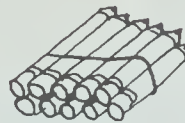
20



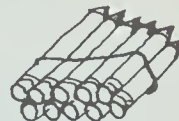
30



40



50

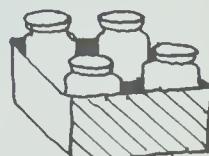
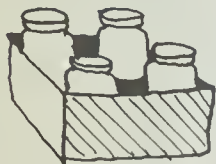


60

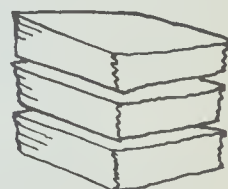
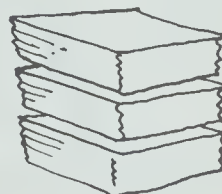
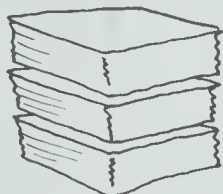
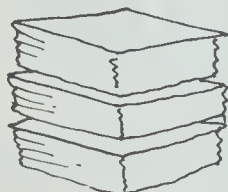


70

Add _____ to get the next number.



Add _____ to get the next number.



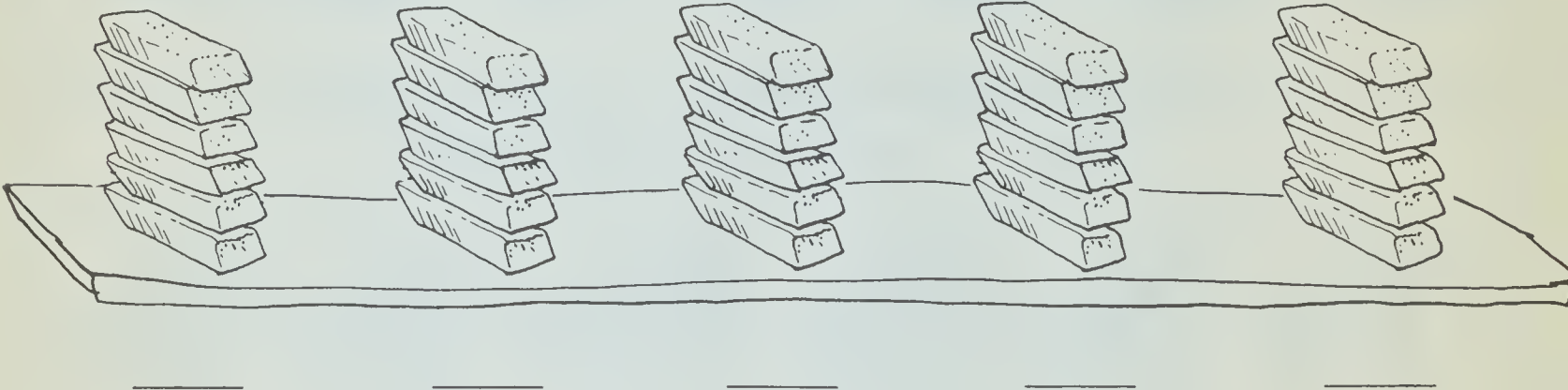
Add _____ to get the next number.

TEACHER NOTES: One application for using number patterns is in grouping large amounts of items into smaller sets and then skip-counting the smaller sets. The pattern, then, results from adding the same number to the number before. Encourage students to use counting on strategies to continue the number patterns. Addition with regrouping is not encountered until Unit 10.

Write the missing numbers in the pattern.



Add _____ to get the next number.



Add _____ to get the next number.



Add _____ to get the next number.



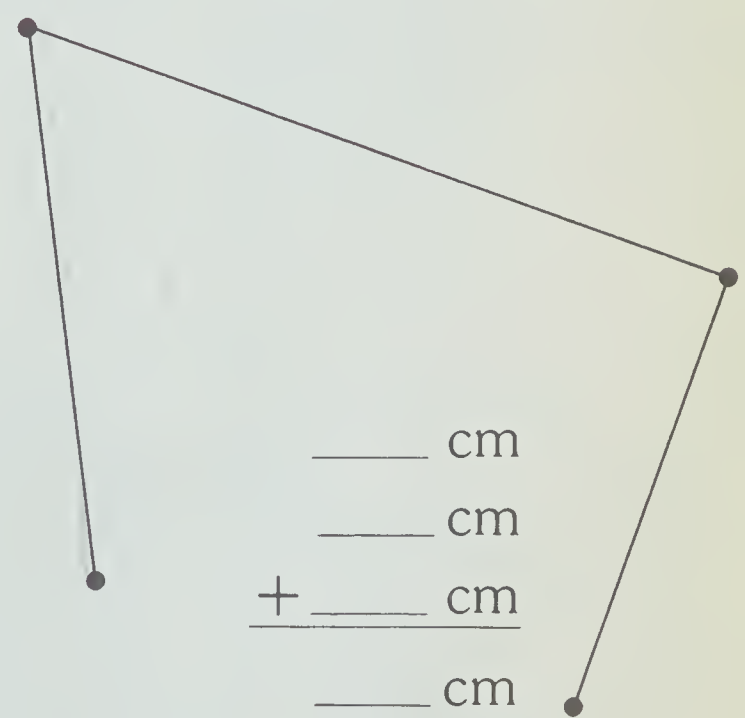
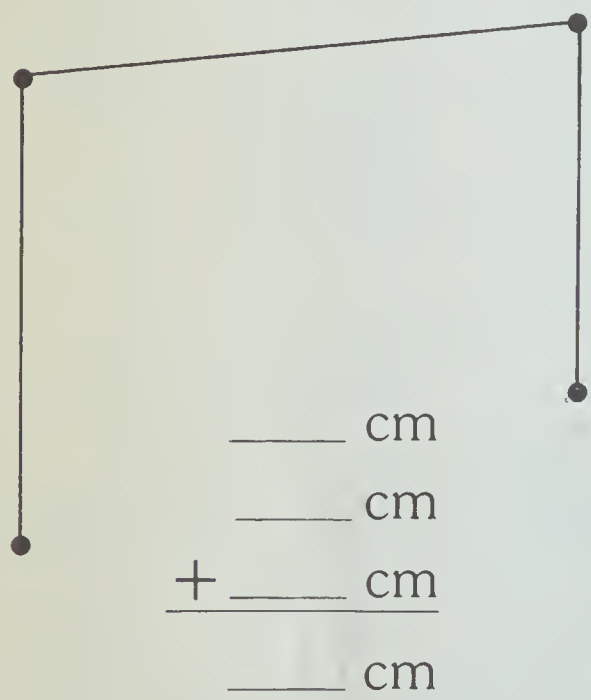
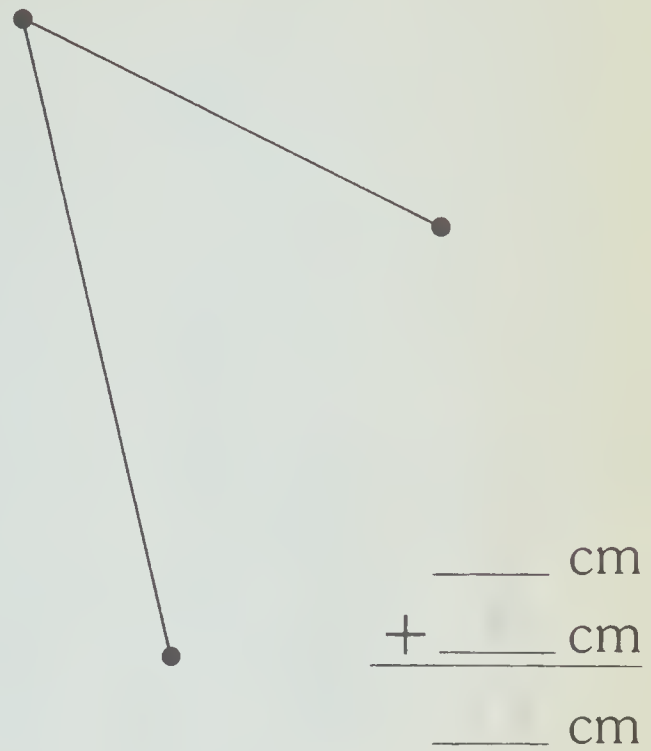
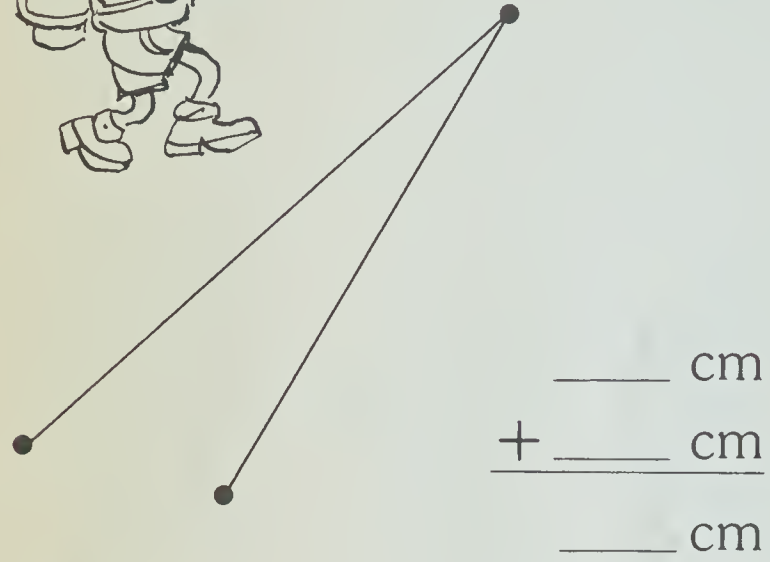
Add _____ to get the next number.

UNIT 8

NAME _____

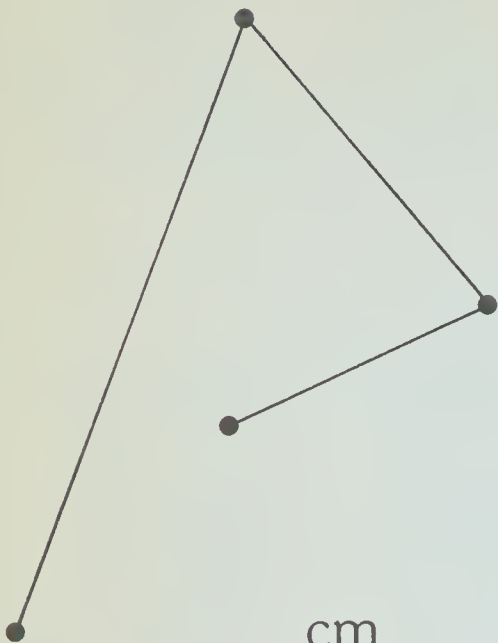
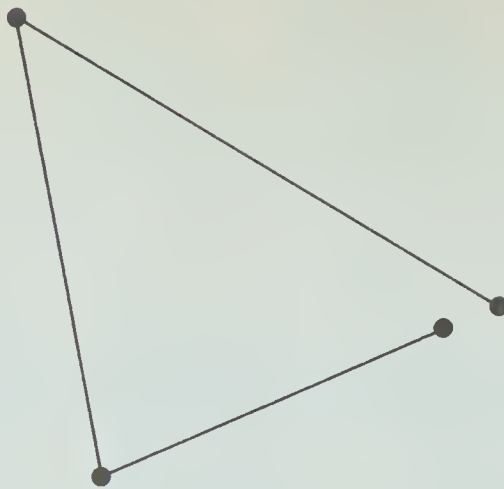
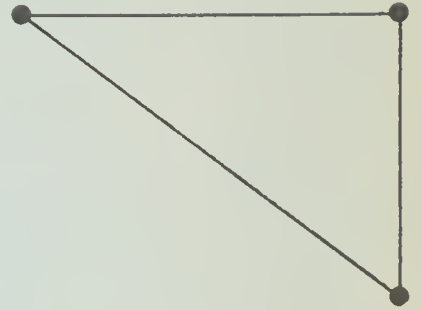
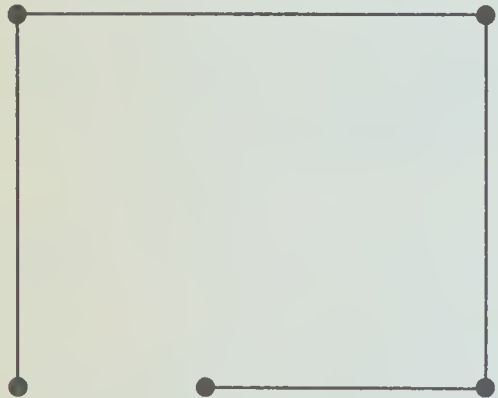
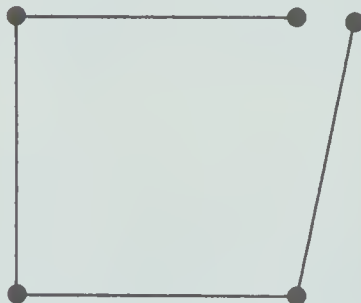
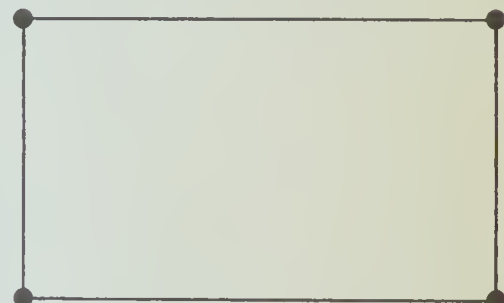
Measurement Problems

Find the length of each path.

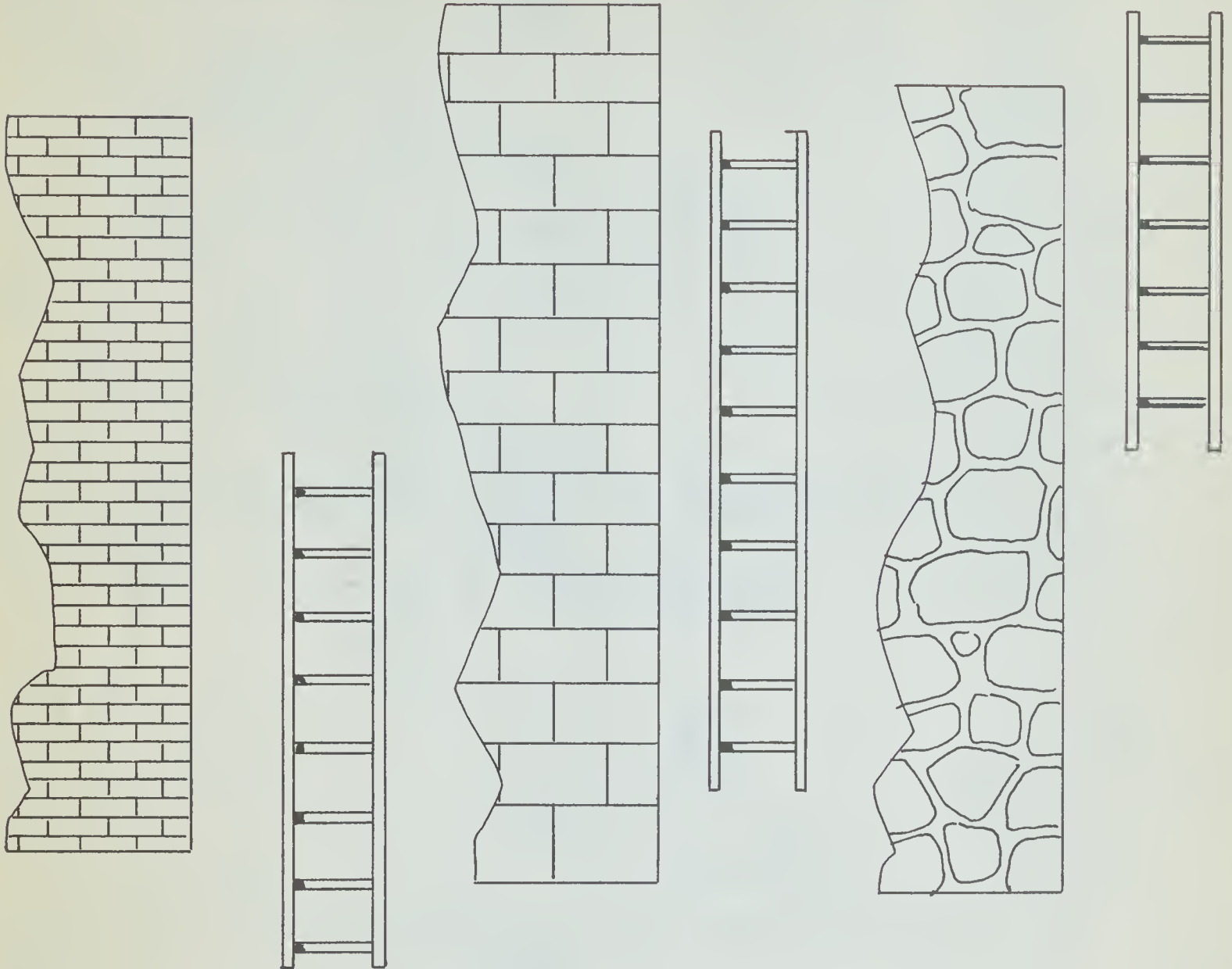


TEACHER NOTES: In this lesson, children use rulers to find the lengths of paths. The second page leads to an informal introduction to the concept of perimeter.

Find the length of each path.


$$\begin{array}{r} \text{_____ cm} \\ \text{_____ cm} \\ + \text{_____ cm} \\ \hline \text{_____ cm} \end{array}$$

$$\begin{array}{r} \text{_____ cm} \\ \text{_____ cm} \\ + \text{_____ cm} \\ \hline \text{_____ cm} \end{array}$$

$$\begin{array}{r} \text{ } \text{ cm} \\ \text{ } \text{ cm} \\ + \text{ } \text{ cm} \\ \hline \text{ } \text{ cm} \end{array}$$

$$\begin{array}{r} ______ \text{ cm} \\ ______ \text{ cm} \\ ______ \text{ cm} \\ + ______ \text{ cm} \\ \hline ______ \text{ cm} \end{array}$$

$$\begin{array}{r} ______ \text{ cm} \\ ______ \text{ cm} \\ ______ \text{ cm} \\ + ______ \text{ cm} \\ \hline ______ \text{ cm} \end{array}$$

$$\begin{array}{r} \text{_____ cm} \\ \text{_____ cm} \\ \text{_____ cm} \\ + \text{_____ cm} \\ \hline \text{_____ cm} \end{array}$$

How much taller is the wall than the ladder?



Wall _____ cm

Ladder ☐ _____ cm

Taller by _____ cm

Wall _____ cm

Ladder ☐ _____ cm

Taller by _____ cm

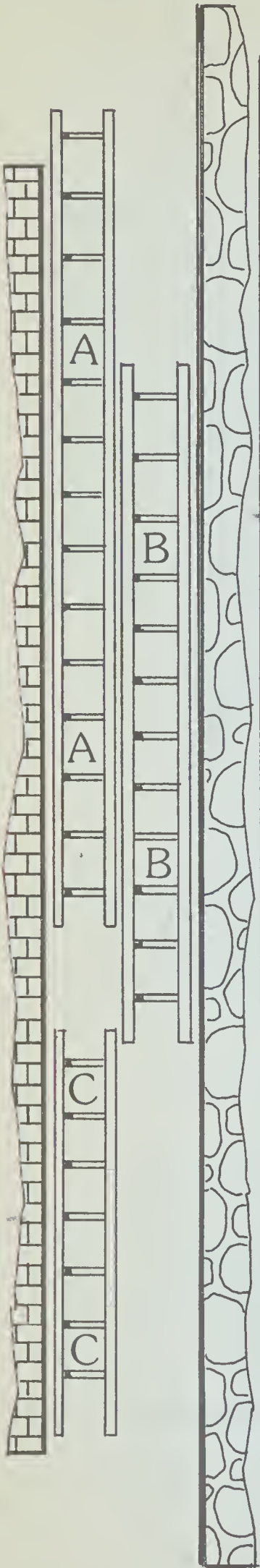
Wall _____ cm

Ladder ☐ _____ cm

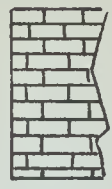
Taller by _____ cm

TEACHER NOTES: In this lesson, the notion of difference is presented in a measurement setting. In addition to discussing the use of subtraction to find the difference, you may want to discuss how the exercises can be solved by adding lengths to the ladders; number sentences with missing addends would be used to record this process.

How much taller is the wall than the ladder?



Ladder A and



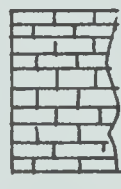
_____ cm
☐ _____ cm
_____ cm

Ladder A and



_____ cm
☐ _____ cm
_____ cm

Ladder B and



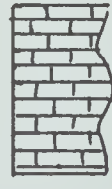
_____ cm
☐ _____ cm
_____ cm

Ladder B and



_____ cm
☐ _____ cm
_____ cm

Ladder C and



_____ cm
☐ _____ cm
_____ cm

Ladder C and



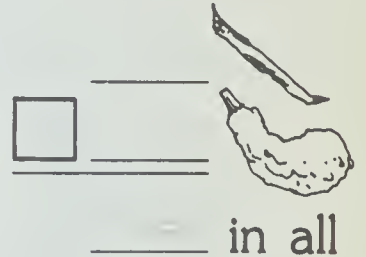
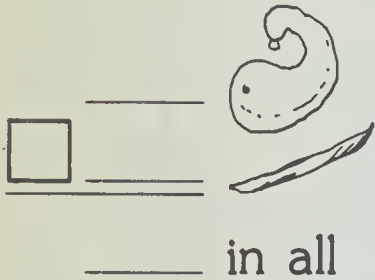
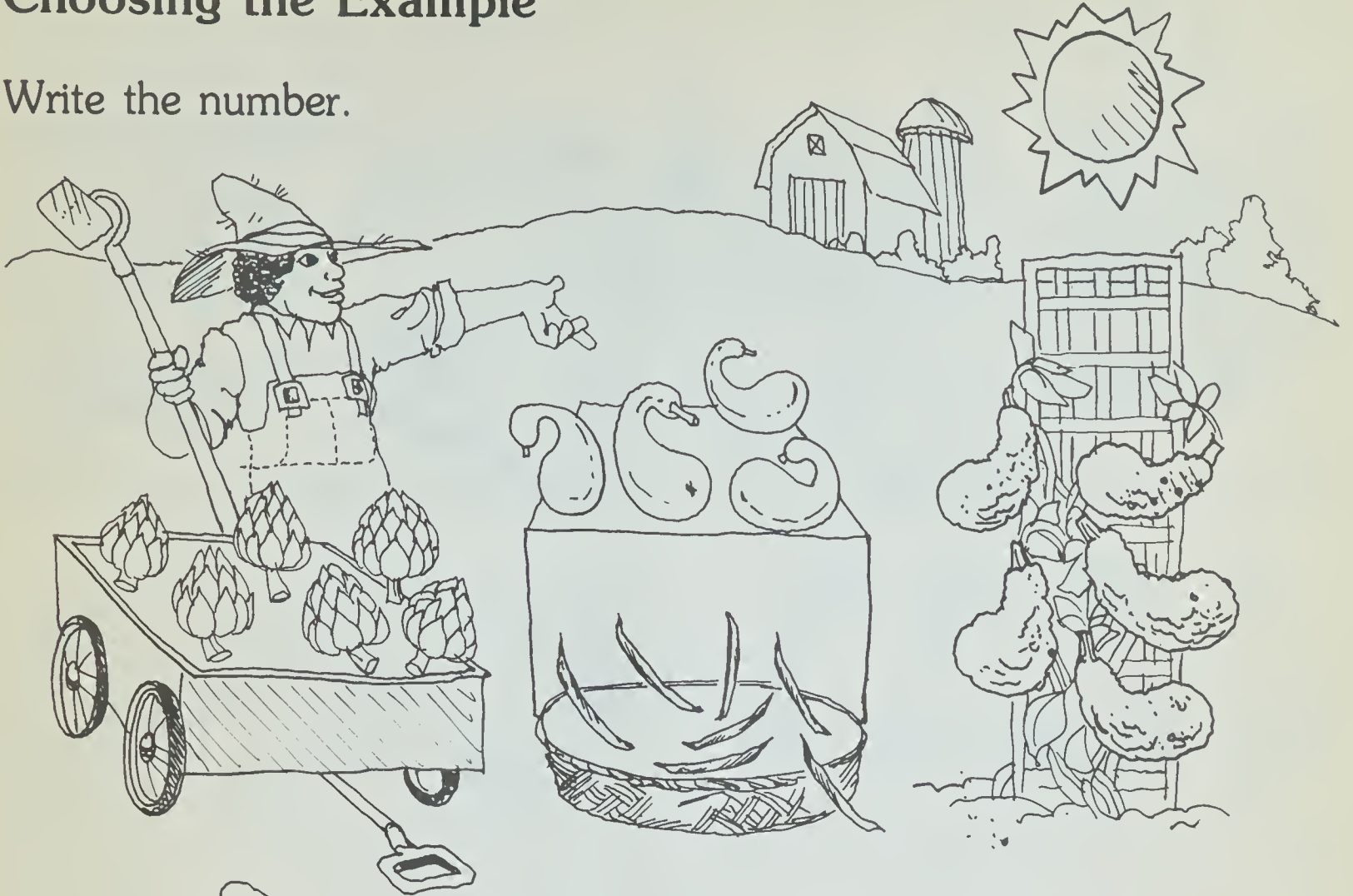
_____ cm
☐ _____ cm
_____ cm

UNIT 9

NAME _____

Choosing the Example

Write the number.





TEACHER NOTES: This lesson provides some more experiences with the choosing of an operation after getting information from a picture. Tell the children to read the answer line carefully to find a clue for which operation to use.

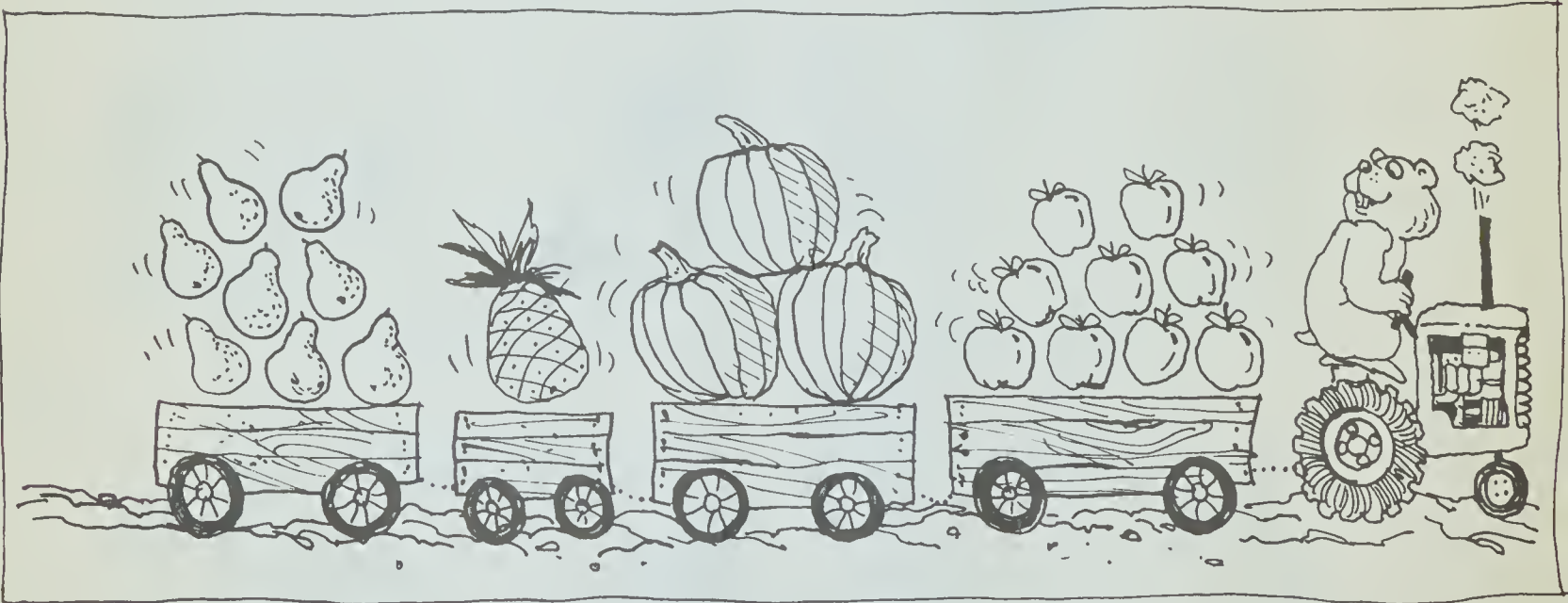
Write the number. Add or subtract.



more 



more 

in all 

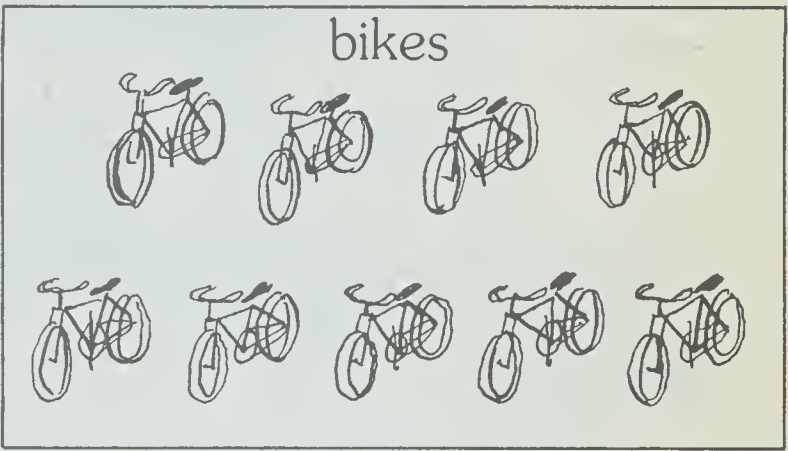
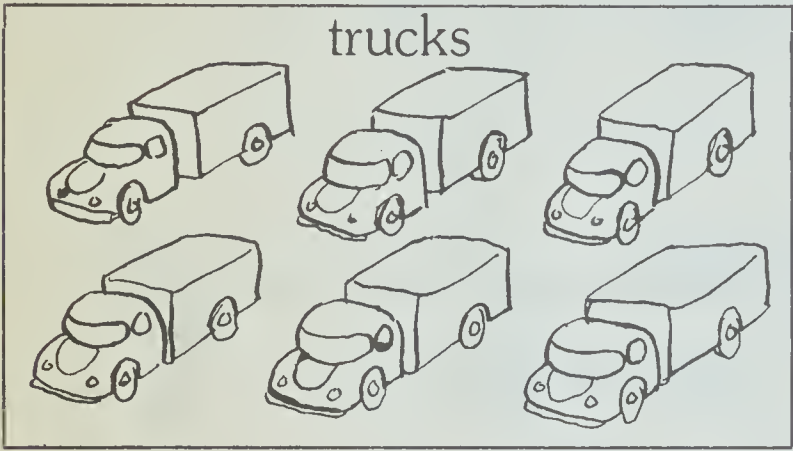
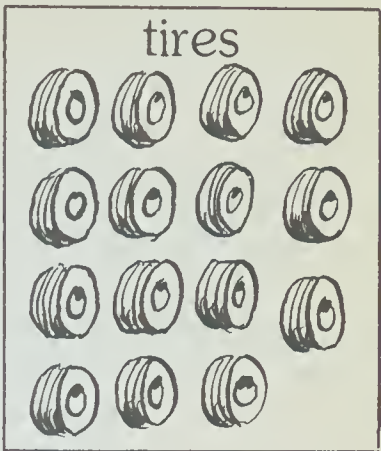
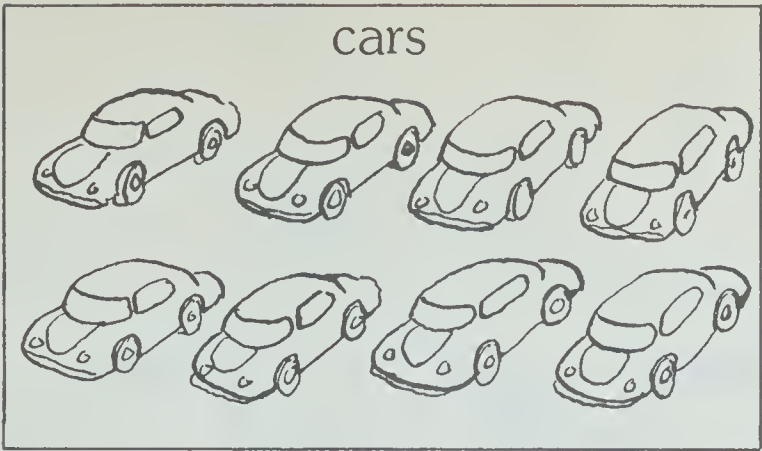
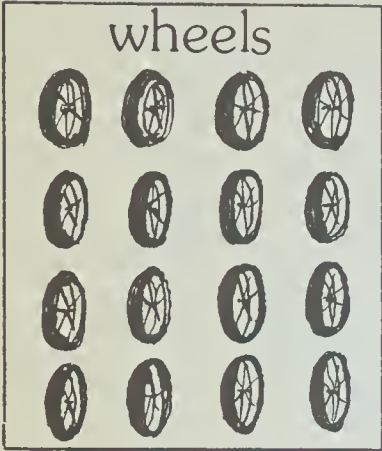


in all 


more 

in all 


NAME _____



How many cars and bikes?

8 cars 9 bikes

☐ $+$ ☐ = _____

_____ in all

How many trucks and cars?

6 trucks 8 cars

☐ $+$ ☐ = _____

_____ in all

How many more wheels than bikes?

16 wheels 9 bikes

☐ - ☐ = _____

_____ more

How many more tires than cars?

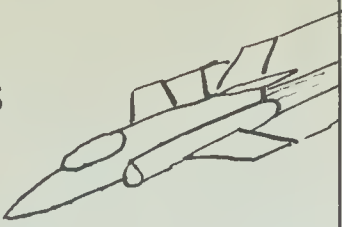
15 tires 8 cars

☐ - ☐ = _____

_____ more

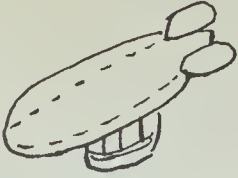
TEACHER NOTES: This lesson provides more experience with choosing an operation after getting information from a picture. Remind students to print the name of things being added and subtracted.

jets




14

blimps



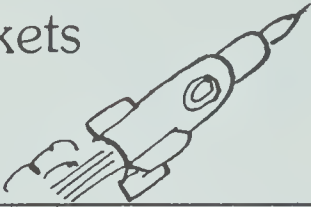
8

helicopters




13

rockets



9

planes




6

<p>How many blimps and planes?</p> <div> <div>_____ blimps</div> <div><input type="checkbox"/> _____ planes</div> <div>_____ in all</div> </div>	<p>How many more jets than rockets?</p> <div> <div>_____</div> <div><input type="checkbox"/> _____</div> <div>_____ more</div> </div>
<p>How many rockets and planes?</p> <div> <div>_____</div> <div><input type="checkbox"/> _____</div> <div>_____ in all</div> </div>	<p>How many more helicopters than blimps?</p> <div> <div>_____</div> <div><input type="checkbox"/> _____</div> <div>_____ more</div> </div>
<p>How many blimps and rockets?</p> <div> <div>_____</div> <div><input type="checkbox"/> _____</div> <div>_____ in all</div> </div>	<p>How many more jets than planes?</p> <div> <div>_____</div> <div><input type="checkbox"/> _____</div> <div>_____ more</div> </div>


Labelling Answers

Solve. Match the label.


4




+ 3 more



9




- 3




fly away

7



+ 6



hop in

now



in all



more



more



in all



in all



18



- 13



5



+ 2



fly in

15



- 9





TEACHER NOTES: The focus of this lesson is on requiring the children to examine the content of the problem in order to determine the content label of the answer. The rebus is used in order to focus on the skill of identifying problem content and matching content to answer labels. Note the two meanings of subtraction used in the illustrations: separating a subset and finding the difference.



Solve. Match the label.

$$\begin{array}{r} 7 \\ + 4 \\ \hline \end{array}$$
 more  



more 

$$\begin{array}{r} 14 \\ - 7 \\ \hline \end{array}$$
  



 in all

$$\begin{array}{r} 16 \\ - 14 \\ \hline \end{array}$$
   walk away



 in all

$$\begin{array}{r} 12 \\ - 9 \\ \hline \end{array}$$
   go away



 are left

$$\begin{array}{r} 8 \\ + 8 \\ \hline \end{array}$$
   walk in



 in all

$$\begin{array}{r} 5 \\ + 4 \\ \hline \end{array}$$
 more  

more 

$$\begin{array}{r} 16 \\ + 4 \\ \hline \end{array}$$
   walk in

 are left

$$\begin{array}{r} 17 \\ - 6 \\ \hline \end{array}$$
  

 in all



NAME _____

Write the letter to finish the sentence.



Write the number.

Roger catches 5  .
He gives away 2  .
He has...

C


Henry has 14  .
He trades 8  .
He has... 6



E

Kim has 7  .
Rhonda has 8  .
There are...

ED

Henry catches 14  .
Roger catches 28  .
They have...

14  are in the can.
Jake uses 9 to fish.
There are...

Carol buys 25  .
Phil gives her 10 more  .
She has...

F


A _____  in all.

C _____  left.

E _____  in all.

B _____  left.

D _____  left.

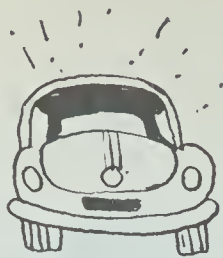
F _____  together.

TEACHER NOTES: Tell the children to finish the last line of the problem by writing the correct label letter that matches. Then have them write the correct answers in the blanks. You may wish to let the children write the last line for the problem and also write the arithmetic for the problem in the problem space.

Write the letter to finish the sentence.

Write the number.

Judy washes 6 cars.
Hal washes 3 cars.
They wash...



Art sells 29 newspapers.
Pat sells 13 newspapers.
They sell...



John plants 3 flowers.
Maria plants 2 flowers.
Together they plant...



John waxes 9 cars.
Hal waxes 5 cars.
John waxes...



Art sells 25 newspapers.
Pam sells 19 newspapers.
Art sells...



Sue has 12 flowers.
She sells 9 flowers.
She has...



A _____ more newspapers.



D 9 cars in all.



B _____ more cars.



E _____ flowers left.



C _____ newspapers in all.

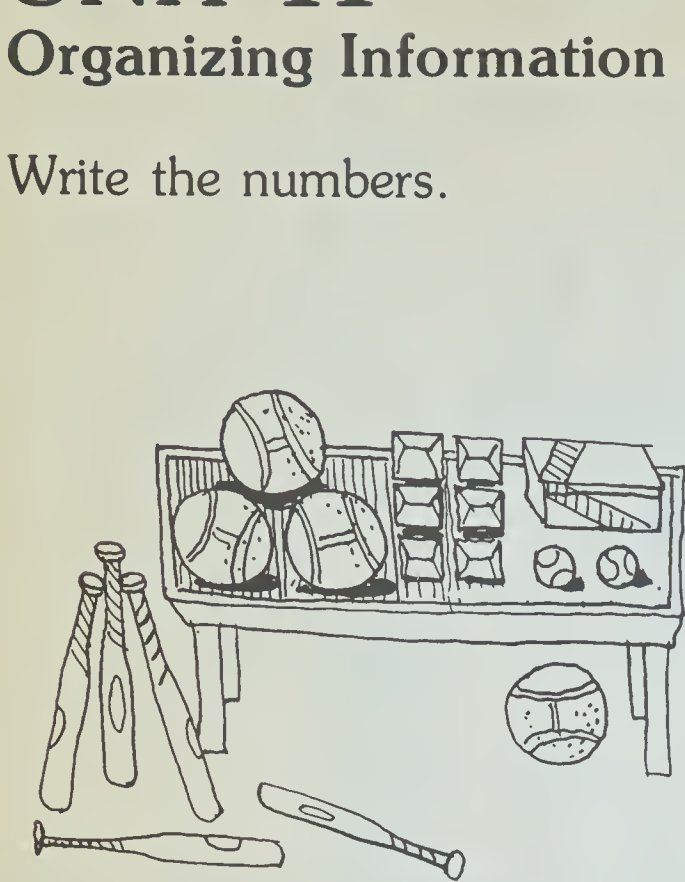


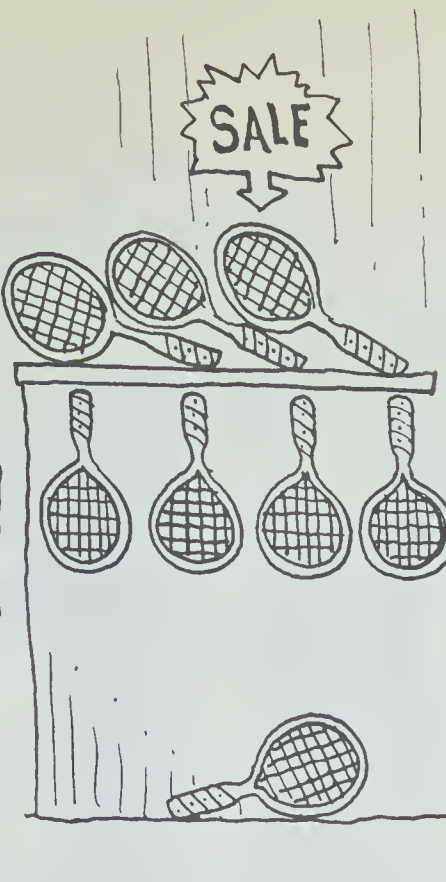
F _____ flowers in all.







Organizing Information

Write the numbers.





_____ bats

☐ _____ basketballs

_____ in all

_____ basketballs

☐ _____ tennis balls

_____ more basketballs

_____ rackets

☐ _____ tennis balls

_____ more rackets

_____ bats

☐ _____ tennis balls

_____ more bats

_____ tennis balls

☐ _____ rackets

_____ more tennis balls

_____ rackets

☐ _____ basketballs

_____ more rackets

_____ rackets

☐ _____ bats

_____ more rackets

_____ bats

☐ _____ tennis balls

_____ more bats

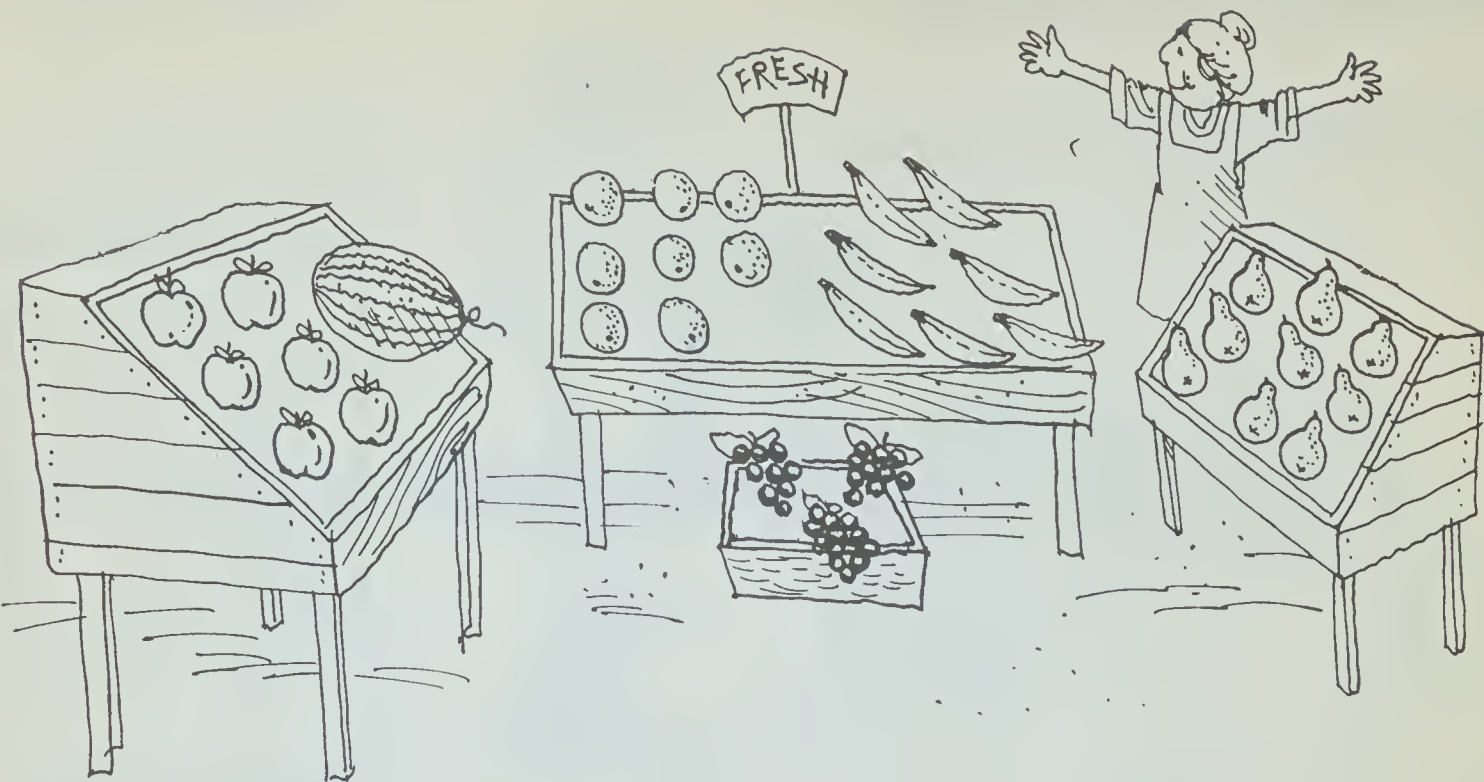
_____ basketballs






☐ _____ tennis balls

_____ in all

TEACHER NOTES: Tell the children to write the numbers in the table after counting the items in the picture. Because it is sometimes a good idea to organize information before using it in the problem solving process, exercises are provided to write information in both vertical and horizontal tables. To help the children decide which operation to write in the box, have them read the words in the answer. Then discuss the action necessary to explain the wording.

Write the numbers.



 apple	 orange	 banana	 grapes	 pear

 apples
 bananas
 in all

 pears
 oranges
 together

 pears
 grapes
 more pears

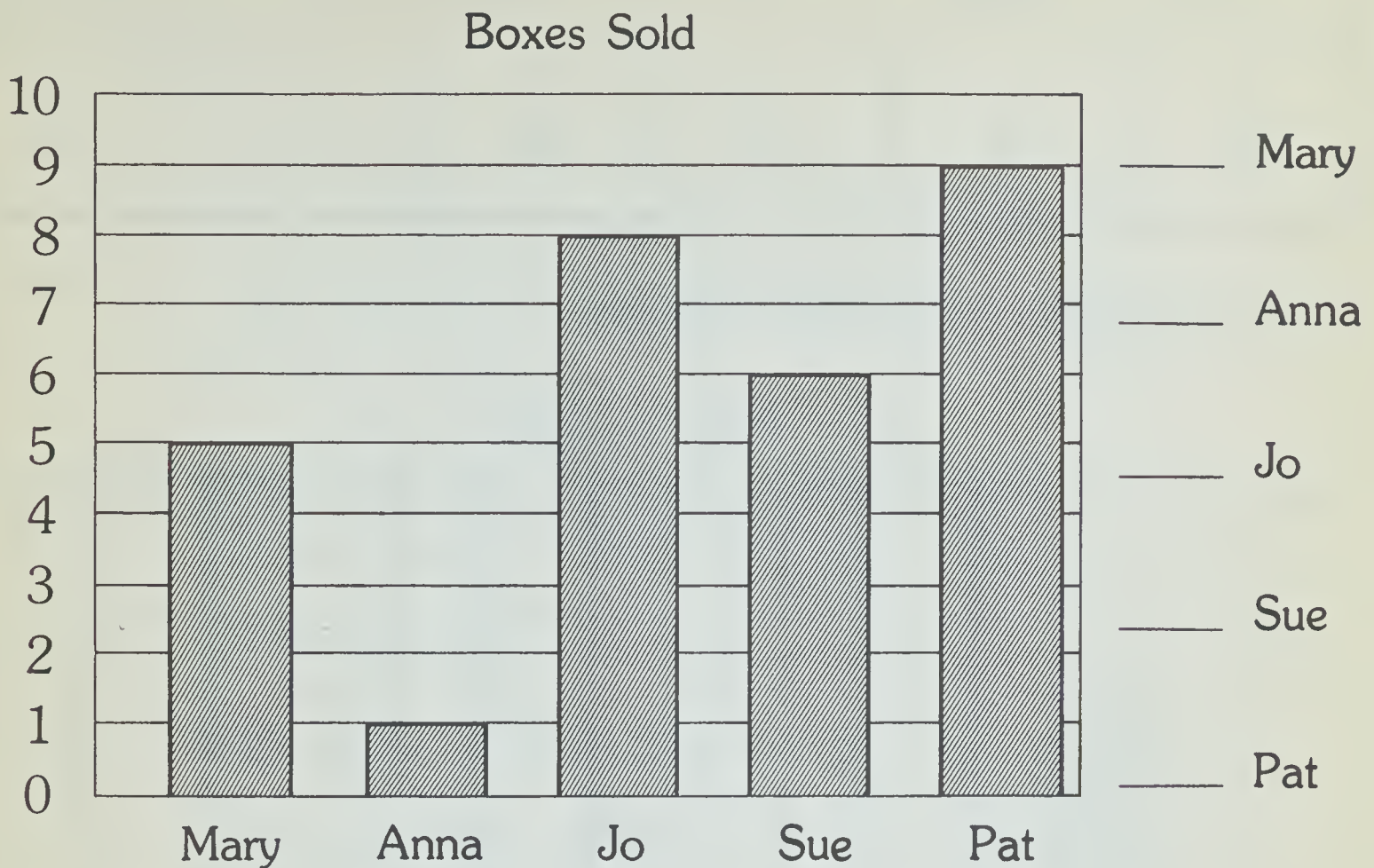
 apples
 grapes
 more apples

 bananas
 oranges
 in all

 oranges
 apples
 more oranges

NAME _____

Write the numbers.



Mary sold 5 boxes.

Anna sold 1 box.

How many boxes sold together? 6

Jo sold 8 boxes.

Pat sold 9 boxes.

How many more boxes did Pat sell? _____

Sue sold 6 boxes.

Mary sold 5 boxes.

Who sold more? _____







How many more? _____

Who sold the most boxes? _____

Who sold the fewest boxes? _____

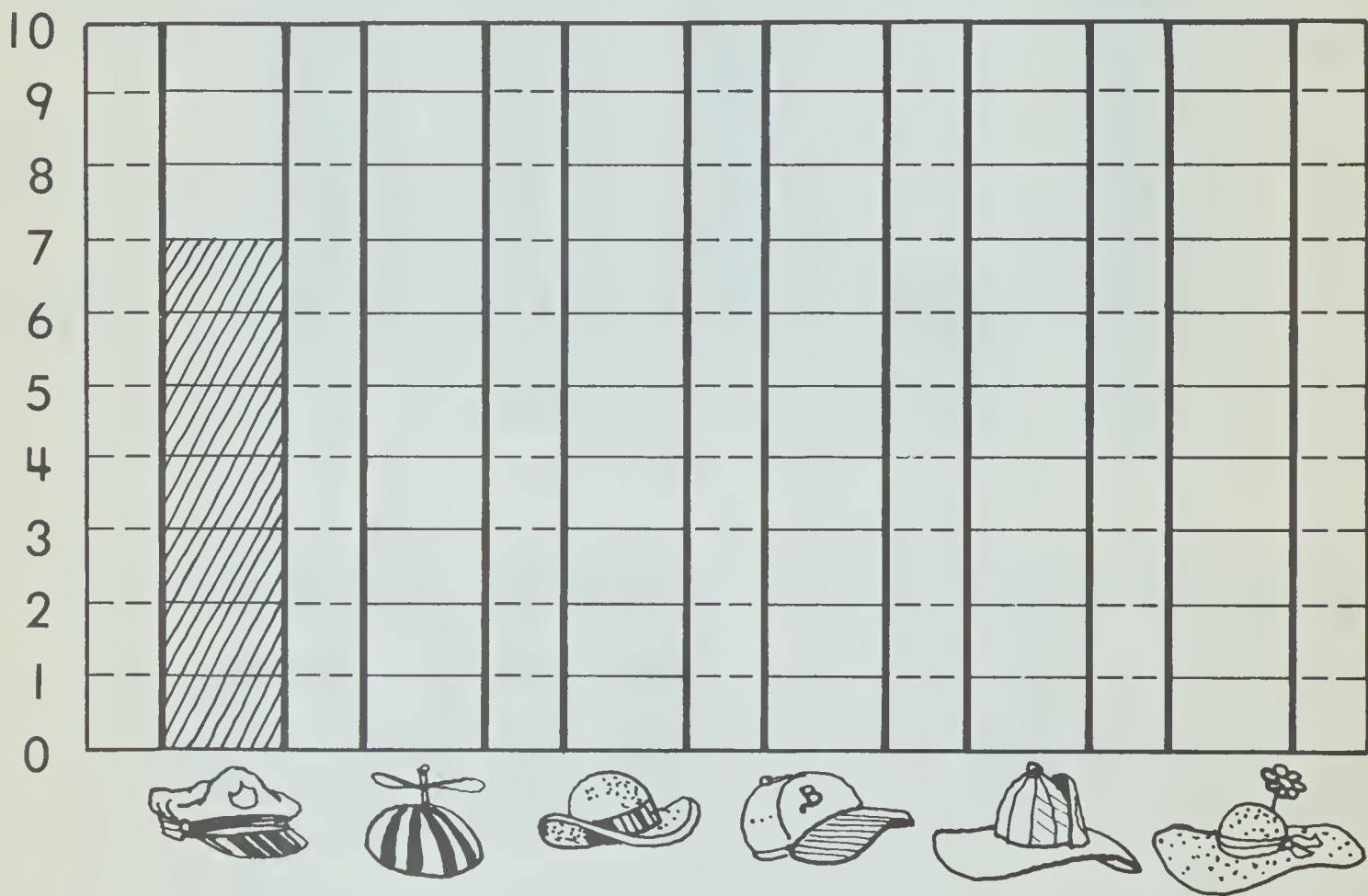
How many boxes were sold in all? _____

TEACHER NOTES: Making and reading graphs are both important skills in organizing information in the problem solving process. First, tell the children to write the numbers next to the names. Then, have the children write the correct numbers in the story problem blanks. On the second page, tell the children to shade the correct number of blocks for each item. Then have them answer the questions.

					
7	9	5	4	1	5

Shade the blocks for the hat numbers.

Hats in Town



Write the numbers.

How many hats in all? _____

How many more  than  ? _____

How many  and  and  ? _____

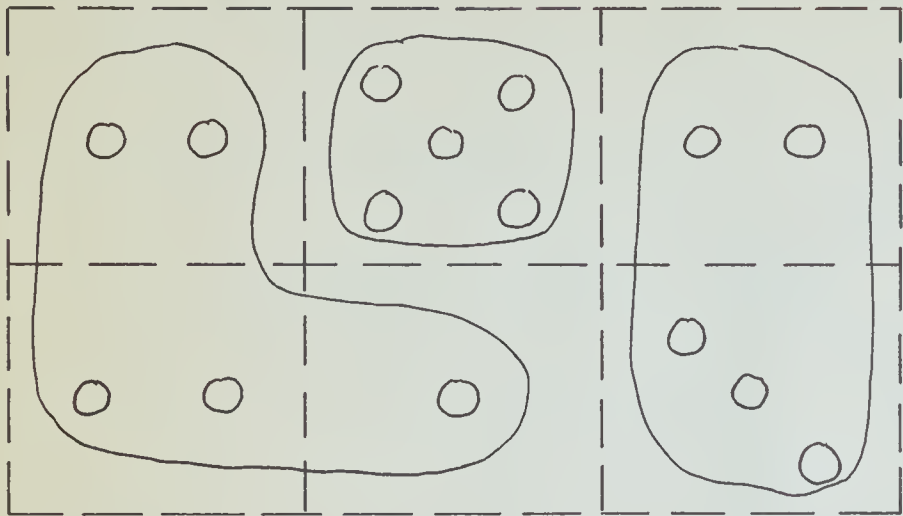
How many  and  and  and  ? _____

UNIT 12

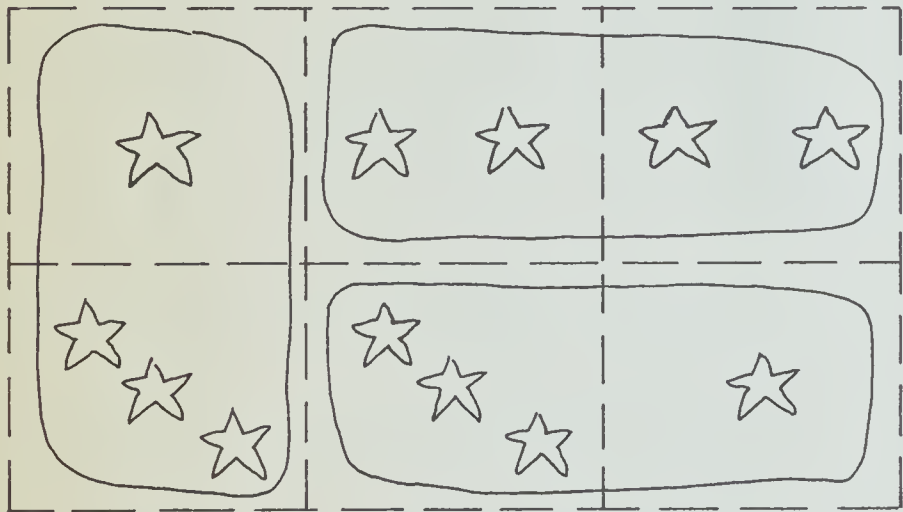
NAME _____

Guess and Check

Fence the groups.





3 5 s = 12



 4 s =



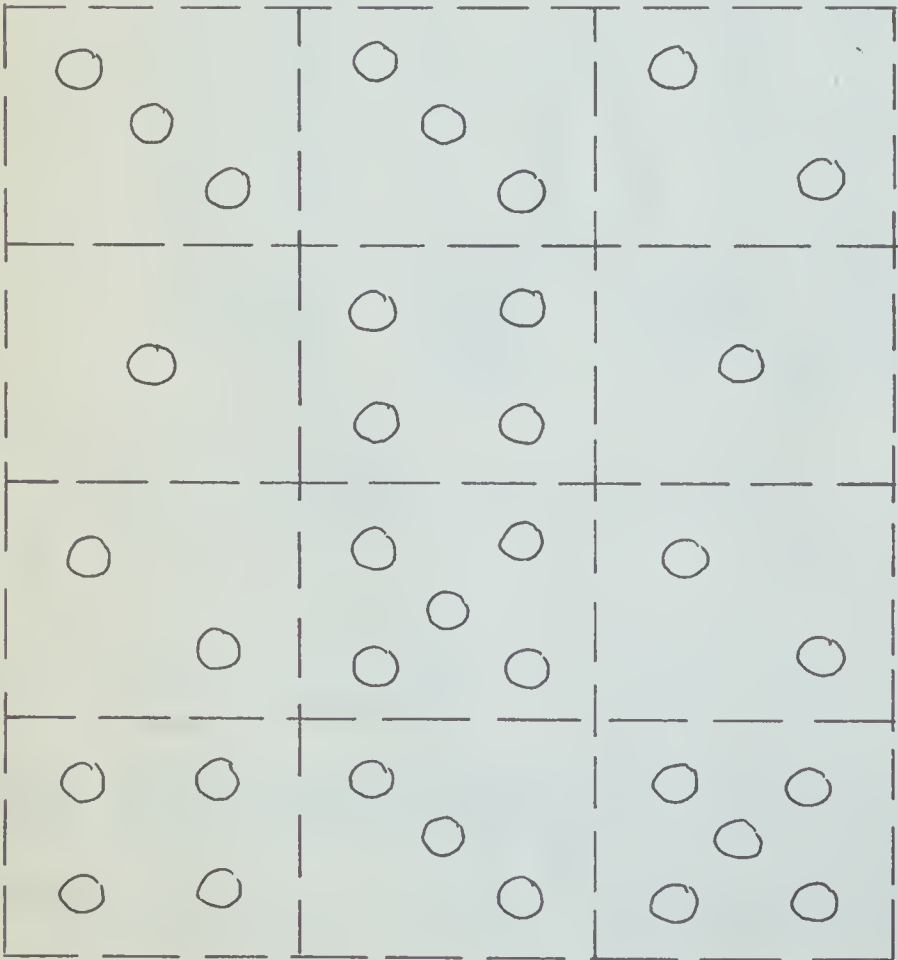
 6 s =

TEACHER NOTES: This activity is called “Fencing Groups”. In each case a fence is drawn around the number of objects asked for. The fenced-in areas must consist of squares with touching sides. These situations are not permitted:  and .

Fence the groups.



_____ $\boxed{6\text{ s}}$ = _____



_____ $\boxed{7\text{ s}}$ = _____

Fence the groups.

3	3	1
1	4	2
4	1	1

4 s

=

2	3	2
4	1	3
1	2	2

5 s

=

4	2	3
2	2	1
1	1	2

6 s

=

6	2	5
4	3	3
8	2	7

10s

=

TEACHER NOTES: Students draw a fence around numbers which result in the requested sum. This activity requires guessing and checking. You can encourage the trial and error process by providing coloured chips to help identify and manipulate the groupings.

Fence the groups.

7	3	5	5
3	2	5	1
2	8	2	9
4	4	6	4

10 s

4	8	4	4
6	3	4	4
6	9	3	3
3	3	3	5

12 s

8	5	8	4
5	6	7	6
9	10	3	3
4	3	3	7

13 s

Review Problems

- Number Patterns
- Choosing the Example
- Organizing Information
- Measurement Problems
- Labelling Answers
- Guess and Check

Write the missing numbers in the pattern.

1 4 7 ____ ____ 16 ____ ____

Add ____ to get the next number.

39 37 35 ____ ____ ____ 27 ____

Subtract ____ to get the next number.

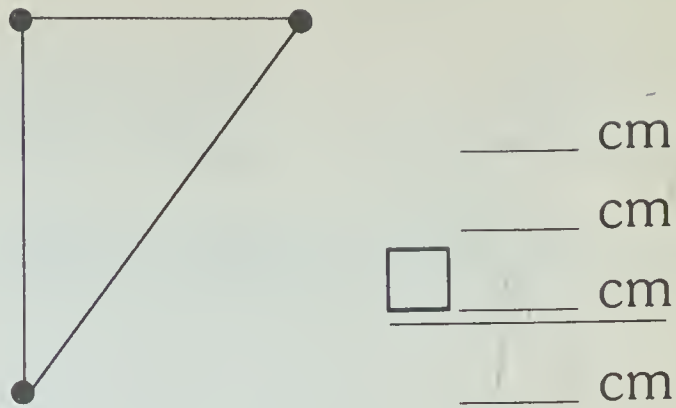
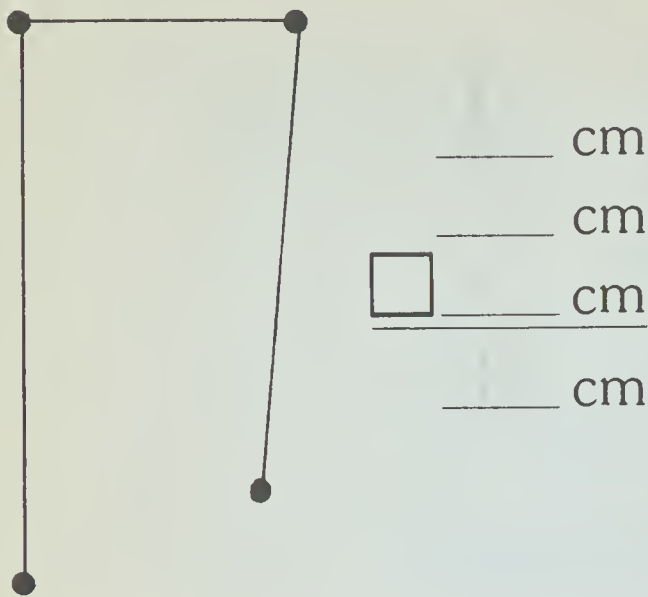
95 84 73 ____ ____ ____ ____ 18

Subtract ____ to get the next number.

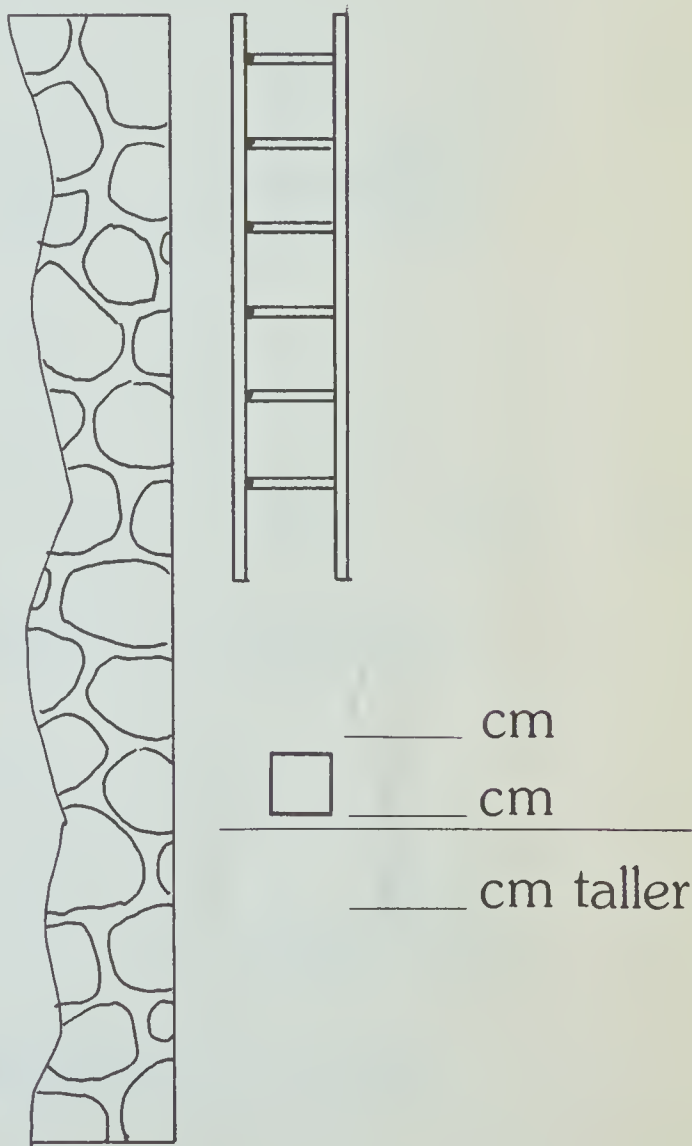
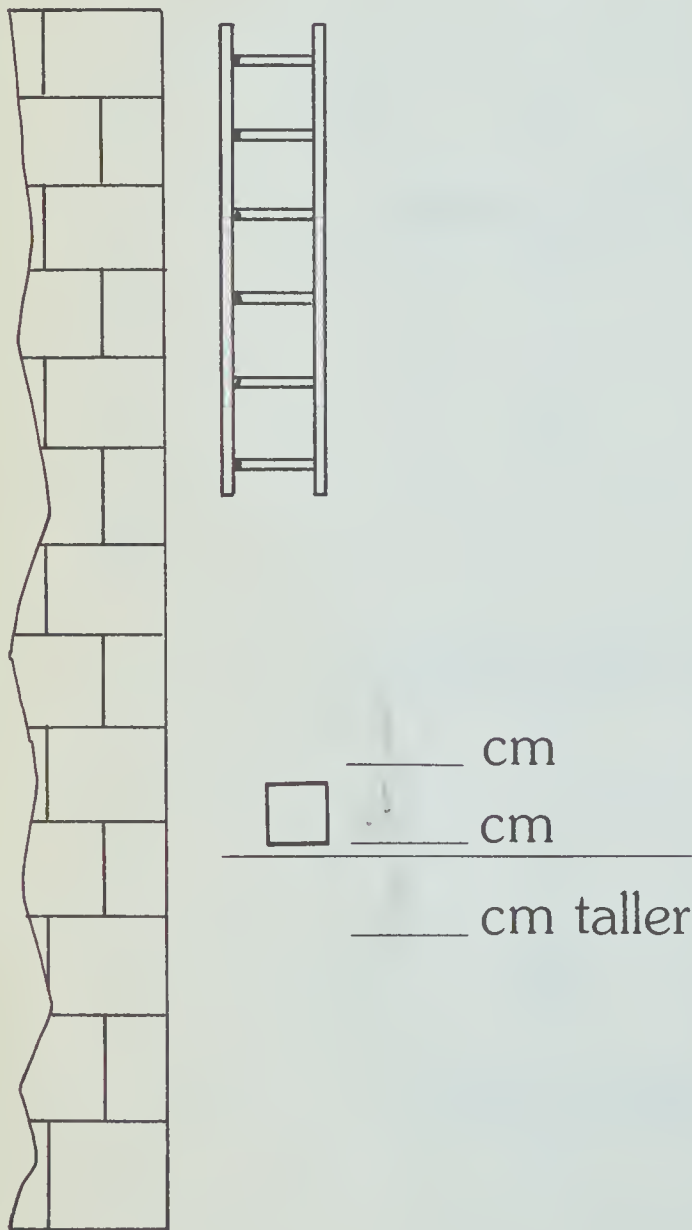
2 17 32 ____ ____ 77 ____

Add ____ to get the next number.

Find the length of each path.

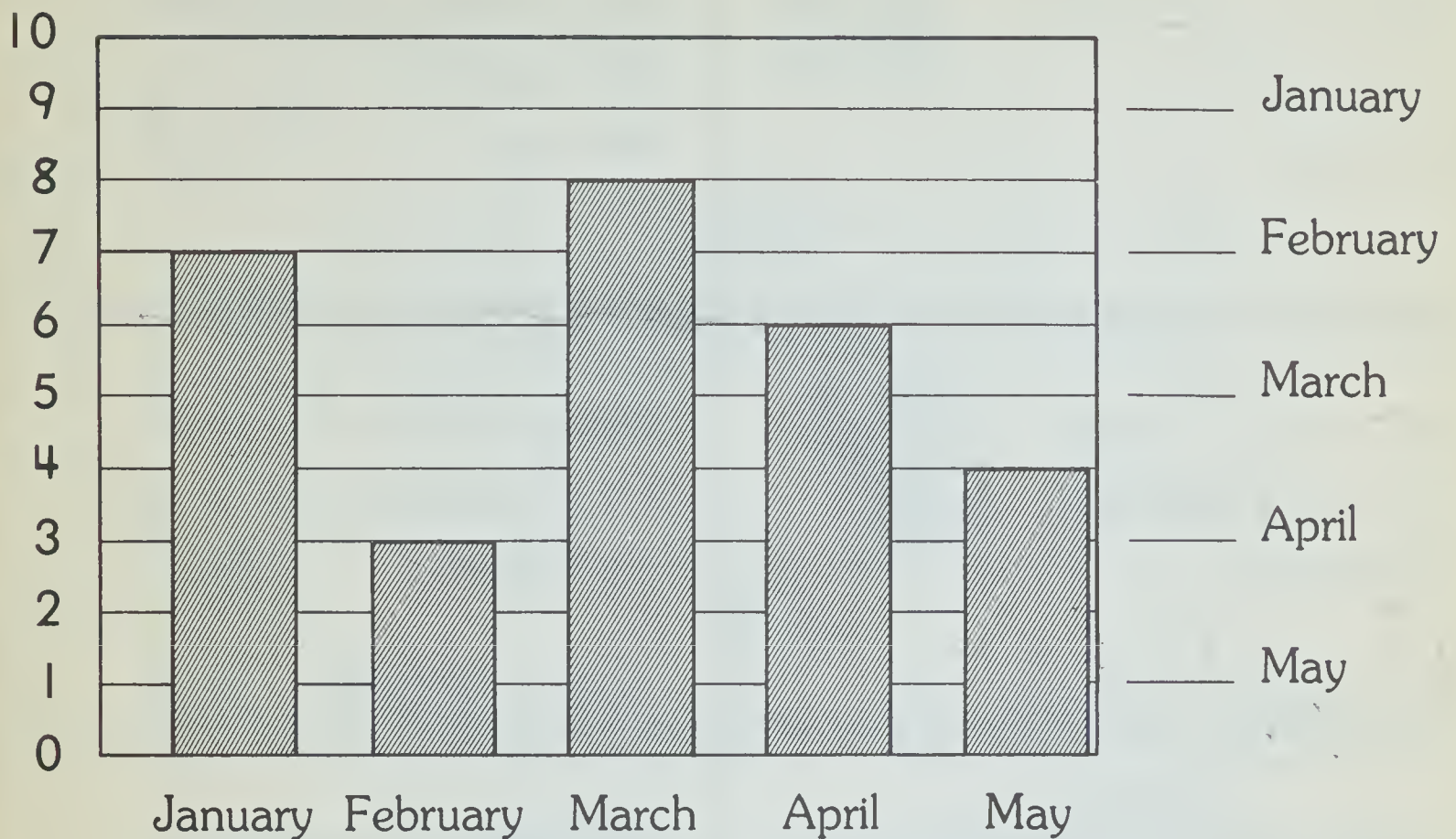


How much taller is the wall than the ladder?



NAME _____

School Days Absent for Linda



How many days is Linda absent:

in May? _____

in February and March? _____

In March? _____

in April and May? _____

in January? _____

from January through May? _____

Which month has the most absent days? _____

Which month has the least absent days? _____

Order the months from least to greatest in absent days.

Write the letter to finish the sentence.

Write the number.

Mike buys 6 stamps.

He uses 4.

He has...



Julie writes 19 postcards.

She mails 5.

She has...



Jill uses 37 stamps.

Al uses 28 stamps.

They use...



George delivers 17 boxes.

He also delivers 57 letters.

He delivers...



Steve carries 48 letters.

Lana carries 27 letters.

They carry...



Jack buys 21 postcards.

He buys 17 more.

He has...



A _____ stamps in all.



D _____ more letters.



B _____ letters together.



E _____ postcards left.



C 2 stamps left.



F _____ postcards in all.



ANSWERS

UNIT 1

Page 3 Colour pictures for numbers
Page 4 Row 1: 5 birds, 3 flowers; 4 kittens, 2 puppies;
Row 2: 5 tigers, 5 monkeys; 2 elephants, 6 lions
Page 5 5 windows, 3 tables, 7 apples, 2 globes
Page 6 Row 1: 5 apples, 2 pears, 2 bananas, 3 nuts; Row 2: 5; Row 3: 4; Row 4: 8; Row 5: 10;
Row 6: 9

UNIT 2

Page 7 Row 1: $5 + 3 = 8$ to left, $5 - 3 = 2$ to right; Row 2: $6 - 3 = 3$ to right, $6 + 3 = 9$ to left; Row 3: $7 + 1 = 8$ to right, $7 - 1 = 6$ to left
Page 8 Row 1: $6 + 3 = 9$ to right, $6 - 3 = 3$ to left; Row 2: $5 - 3 = 2$ to left, $5 + 3 = 8$ to right; Row 3: $9 - 1 = 8$ to right, $9 + 1 = 10$ to left; Row 4: $7 - 2 = 5$ to left, $7 + 2 = 9$ to right
Page 9 Row 1: F, E; Row 2: C, A; Row 3: B, D; Row 4: 9, 6, 6, 9, 8, 5
Page 10 M, O, T, H, E, R; Row 2: 2, 9, 9, 0, 3, 1

UNIT 3

Page 11 Row 1: 28, 27, 26, 25, 24; Row 2: 13, 23, 33, 43, 53; Row 3: 45, 35, 25, 15, 5
Page 12 Row 1: 23, 33, 43, 53, 63; Row 2: 23, 22, 21, 20, 19; Row 3: 62, 52, 42, 32, 22; Row 4: 28, 29, 30, 31, 32

Page 13

10	9	8	7	6	5
	19			16	
30	29	28	27	26	25
40	39	38	37	36	35
50		48	47		45
60		58	57		55
70	69	68	67	66	65
80	79			76	75
	89	88	87	86	
100	99	98	97	96	95

Page 14

100	90	80	70	60	50
99		79	69		49
98	88	78	68	58	48
97	87			57	47
	86	76	66	56	
	85	75	65	55	
94	84	74	64	54	44
93		73	63		43
92	82	72	62	52	42

UNIT 4

Page 15 Row 1: 10, 12; Row 2: 4, 7; Row 3: 8, 3
Page 16 Row 1: $7 + 3 = 10$, $7 - 4 = 3$; Row 2: $12 - 8 = 4$, $2 + 5 = 7$; Row 3: $11 - 5 = 6$, $2 + 2 = 4$; Row 4: $10 - 4 = 6$, $12 - 5 = 7$
Page 17 Row 2: $10\text{¢} - 7\text{¢} = 3\text{¢}$; Row 3: $7\text{¢} + 5\text{¢} = 12\text{¢}$; Row 4: $9\text{¢} + 2\text{¢} = 11\text{¢}$
Page 18 Row 1: $11\text{¢} - 7\text{¢} = 4\text{¢}$; Row 2: $8\text{¢} + 4\text{¢} = 12\text{¢}$; Row 3: $7\text{¢} - 5\text{¢} = 2\text{¢}$; Row 4: $11\text{¢} - 9\text{¢} = 2\text{¢}$; Row 5: $5\text{¢} + 5\text{¢} = 10\text{¢}$


UNIT 5

Page 19 Row 2: triangle; Row 3: white circle; Row 4: dotted triangle; Row 5: shaded circle;
Row 6: white triangle
Page 20 Row 2: large triangle; Row 3: large triangle; Row 4: shaded square; Row 5: dotted triangle;
Row 6: circle; Row 7: rectangle; Row 8: small triangle
Page 21 Row 1: \triangle ∇ ; Row 2: \odot \ominus ; Row 3: \square \square ; Row 4: \odot \odot ; Row 5: \square \square
Page 22 Row 1: end view; Row 2: end view with handle; Row 3: top view; Row 4: top view; Row 5: back view; Row 6: top view

UNIT 6

Page 23 Row 1: $3 - 1 = 2$; Row 2: $3 + 5 = 8$
Page 24 Row 1: $7 - 4 = 3$; Row 2: $6 + 4 = 10$
Page 25 Row 1: $11 - 4 = 7$; Row 2: $4 + 2 = 6$
Page 26 Row 1: $14 - 8 = 6$; Row 2: $5 + 7 = 12$; Row 3: $4 + 3 = 7$

UNITS 1-6

Page 27 Row 1: triangle; Row 2: white square; Row 3: circle; Row 4: ; Row 5: small square;
Row 6: shaded square

Page 28

87	77	67	57	47	37
88		68	58		38
89		69	59		39
90	80	70	60	50	40
91	81			51	41
92	82	72	62	52	42
93	83			53	43
	84	74	64	54	
95	85	75	65	55	45

Page 29 Row 1: $6 - 4 = 2$; Row 2: $8 + 4 = 12$; Row 3: $12\text{¢} - 9\text{¢} = 3\text{¢}$; Row 4: $7 - 4 = 3$;
Row 5: $5\text{¢} + 6\text{¢} = 11\text{¢}$
Page 30 Row 1: $7 - 2 = 5$; Row 2: $6 - 3 = 3$; Row 3: $3 + 4 = 7$

UNIT 7

Page 31 Row 1: 20, 19, 18, 17, 16, 15, 14, 13, Subtract 1; Row 2: 4, 6, 8, 10, 12, 14, 16, Add 2;
Row 3: 11, 22, 33, 44, 55, 66, 77, 88, Add 11; Row 4: 19, 17, 15, 13, 11, 9, 7, 5, Subtract 2
Page 32 Row 1: 11, 12, 13, 14, 15, 16, 17, 18, Add 1; Row 2: 99, 88, 77, 66, 55, 44, 33, 22,
Subtract 11; Row 3: 97, 86, 75, 64, 53, 42, 31, 20, Subtract 11; Row 4: 21, 32, 43, 54, 65, 76, 87,
98, Add 11; Row 5: 10, 15, 20, 25, 30, 35, 40, 45, Add 5; Row 6: 17, 22, 27, 32, 37, 42, 47, 52,
Add 5
Page 33 Row 2: Add 10; Row 3: 4, 8, 12, 16, 20, 24, Add 4; Row 3: 3, 6, 9, 12, 15, Add 3
Page 34 Row 1: Add 2; Row 2: 6, 12, 18, 24, 30, Add 6; Row 3: 1, 2, 3, 4, 5, 6, Add 1; Row 4: 5,
10, 15, 20, Add 5

UNIT 8

Page 35 Row 1: $7 + 6 = 13\text{ cm}$; $7 + 5 = 12\text{ cm}$; Row 2: $5 + 6 + 4 = 15\text{ cm}$;
 $6 + 8 + 5 = 19\text{ cm}$
Page 36 Row 1: $7 + 4 + 3 = 14\text{ cm}$; $6 + 5 + 4 = 15\text{ cm}$; $4 + 3 + 5 = 12\text{ cm}$;
Row 2: $4 + 5 + 4 + 3 = 16\text{ cm}$; $3 + 3 + 3 + 3 = 12\text{ cm}$; $5 + 3 + 5 + 3 = 16\text{ cm}$
Page 37 Row 1: $10 - 7 = 3\text{ cm}$; $12 - 9 = 3\text{ cm}$; $11 - 6 = 5\text{ cm}$
Page 38 Row 1: $19 - 12 = 7\text{ cm}$; $23 - 12 = 11\text{ cm}$; Row 2: $19 - 10 = 9\text{ cm}$;
 $23 - 10 = 13\text{ cm}$; Row 3: $19 - 6 = 13\text{ cm}$; $23 - 6 = 17\text{ cm}$

UNIT 9

Page 39 Row 1: $4 + 7 = 11$, $6 - 5 = 1$, $7 + 5 = 12$; Row 2: $7 - 6 = 1$, $5 - 4 = 1$, $6 - 4 = 2$
Page 40 Row 1: $9 - 7 = 2$, $6 - 4 = 2$, $7 + 2 = 9$; Row 2: $8 + 9 = 17$, $3 - 1 = 2$, $3 + 8 = 11$
Page 41 Row 1: $8 + 9 = 17$, $6 + 8 = 14$; Row 2: $16 - 9 = 7$, $15 - 8 = 7$
Page 42 Row 1: $8 + 6 = 14$, $14 - 9 = 5$; Row 2: $9 + 6 = 15$, $13 - 8 = 5$; Row 3: $8 + 9 = 17$,
 $14 - 6 = 8$

UNIT 10

Page 43 Row 1: 7 in all, 5 more frogs; Row 2: 6 bees now, 7 butterflies in all; Row 3: 13 frogs in all, 6 more beetles

Page 44 Row 1: 11 pigs in all, 7 more sheep; Row 2: 2 turtles are left, 3 pigs are left; Row 3: 16 16 kittens in all, 9 turtles in all; Row 4: 20 sheep in all, 11 more kittens

Page 45 Row 1: 6 hooks left, D; Row 2: 15 hooks in all, E; 42 fish together, F; Row 3: 5 worms left, B; 35 worms in all, A

Page 46 Row 1: 9 cars in all, D; 42 newspapers in all, C; Row 2: 5 cakes in all, F; 4 more cars, B; Row 3: 6 more newspapers, A; 3 cakes left, E

UNIT 11

Page 47 5 bats, 4 basketballs, 8 rackets, 2 tennis balls; Row 1: $5 + 4 = 9$, $4 - 2 = 2$, $8 + 5 = 13$; Row 2: $8 - 2 = 6$, $4 + 8 = 12$, $8 - 4 = 4$; Row 3: $8 - 5 = 3$; $5 - 2 = 3$; $4 + 2 = 6$

Page 48 Table, 6, 8, 7, 3, 9; Row 1: $6 + 7 = 13$, $9 + 8 = 17$, $9 - 3 = 6$; Row 2: $6 - 3 = 3$, $7 + 8 = 15$, $8 - 6 = 2$

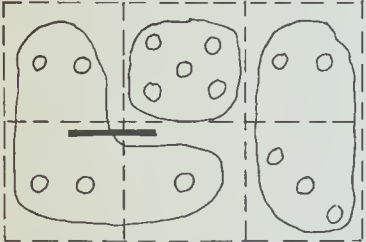
Page 49 Mary 5, Anna 1, Jo 8, Sue 6, Pat 9; Row 1: $5 + 1 = 6$, Sue $6 - 5 = 1$; Row 2: $9 - 8 = 1$, Pat sold most, Anna sold fewest, 29 boxes in all

Page 50 Row 1: 31; Row 2: 3; Row 3: 15; Row 4: 25

UNIT 12


Page 51

Row 1:



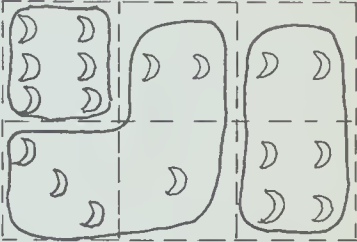
$3 \boxed{5s} = 15$

Row 2:



$3 \boxed{4s} = 12$


Row 3:



$3 \boxed{6s} = 18$

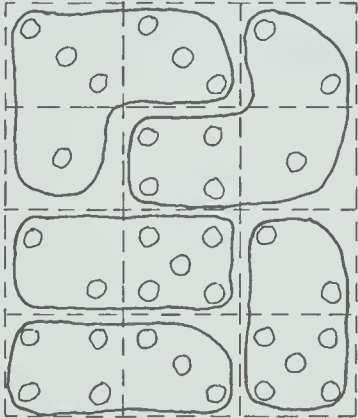
Page 52

Row 1:



$5 \boxed{6s} = 30$

Row 2:

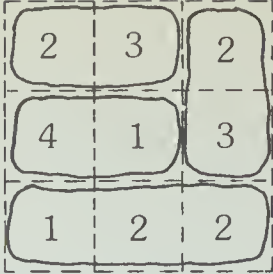


$5 \boxed{7s} = 35$

Page 53 Row 1:

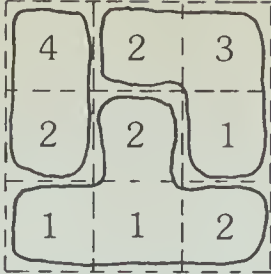


5 4s = 20



4 5s = 20

Row 2:



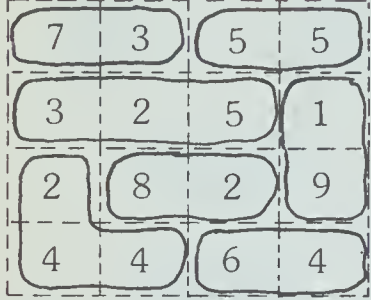
4 6s = 24



4 10s = 40

Page 54

Row 1:



7 10s

Row 2:



6 12s

Row 3:



7 13s

UNITS 7-12

Page 55 Row 1: 1, 4, 7, 10, 13, 16, 19, 22, Add 3;
Row 2: 39, 37, 35, 33, 31, 29, 27, 25, Subtract 2;
Row 3: 95, 84, 73, 62, 51, 40, 29, 18, Subtract 11;
Row 4: 2, 17, 32, 47, 62, 77, 92, Add 15

Page 56 Row 1: $6 + 3 + 5 = 14$ cm, $3 + 4 + 5 = 12$ cm;
Row 2: $13 - 5 = 8$ cm, $12 - 6 = 6$ cm

Page 57 January: 7; February: 3; March: 8; April: 6; May: 4; February and March: 11; April and May: 10; January through May: 28; Most absent days: March; Least absent days: February; Month order: February, May, April, January, March

Page 58 Row 1: C, 2 stamps left; E, 14 postcards left; Row 2: A, 65 stamps in all; D, 40 more letters; Row 3: B, 75 letters together; F, 38 postcards in all

QA 107 H83 1982 GR-2 PROB-BK- C-2
HOUGHTON MIFFLIN MATHEMATICS/

M2 39542344 CURR



000032632200

AUTHORIZATION
RECOMMENDED FOR USE
WITHDRAWN
IN ALBERTA SCHOOLS



Houghton
Mifflin
Canada
Limited



1-98032